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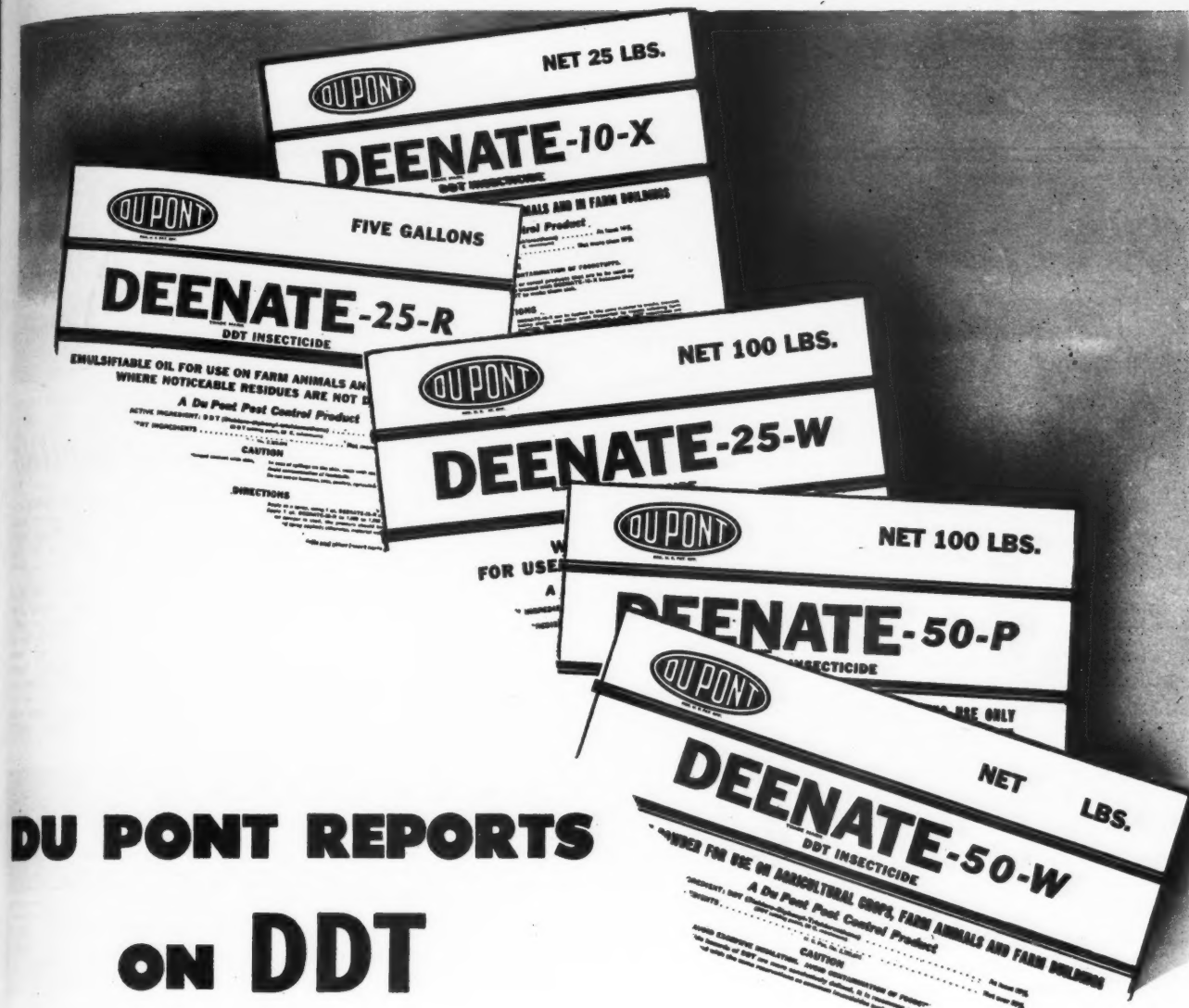
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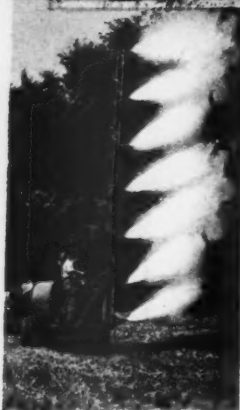
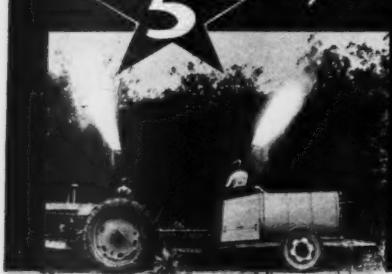
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OCTOBER 1946
VOL. 67 No. 4

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AMERICAN FRUIT GROWER

LETTERS TO THE EDITOR

Collects Wild Edible Fruit

Dear Editor:

As a hobby, I collect our wild edible fruits. After studying the possibilities I intend to select some for improving or hybridization. Possibly you have other readers interested in our native fruits. I would like to correspond with such readers. By obtaining or exchanging plants with other interested persons, I hope to build up a collection of select strains.

I am especially interested now in the sweet fruited Viburnums, nannyberry, black haw, the dryland blueberry commonly called "low huckleberry", the serviceberry also known as sarviceberry, shadbush, juneberry, and mayhaw.

However, my interests are not limited to these plants and I will welcome a letter from anyone with a promising wild fruit.

R.F.D. No. 2
Corydon, Ky.

Malcolm Arnett

Maybe some of our readers can help Mr. Arnett in his search for wild native varieties. It is a good hobby, and many others among our readers, we feel sure, are interested in the fruit.—Ed.

More About the Jamberry

Dear Sir:

The "jamberry" discussed briefly on page 13 in the August number of the AMERICAN FRUIT GROWER, appears to be none other than the pepino (*Solanum muricatum* Ait.) of the Andean region of South America.

The pepino has been grown experimentally in California for many years, and more than a score of introductions have been made by this division, chiefly from South America. It is a shrubby perennial 2 to 3 feet high, with oblong-lanceolate leaflets about 3 inches long and bright blue flowers, resembling those of the potato, up to 3/4 inch across, in long-stalked clusters. The edible fruits are up to 6 inches in length, and are ovoid or round, or even long and slender. Usually they are yellow streaked with purple, but may range from creamy yellow or green to dark purple. The fruits are generally seedless, although sometimes they contain small seeds similar to those of the tomato, and the very juicy, aromatic flesh is crisp and has a pleasant, refreshing subacid taste. In the Andean countries the fruits are very popular, and are sold everywhere in the markets. The pepino is native to the Andes at altitudes ranging from 4000 feet to 8000 feet, and it is said to be able to withstand some frost. One report from California, however, states that plants were injured by a temperature of 26° F. Propagation is by cuttings of growing shoots, or by seeds when available.

In general, plants native to the highlands of tropical and subtropical regions are not likely to thrive in most parts of the United States.

U.S.D.A. Agr. Res. Adm. P. G. Russell
Div. of Plant Expl. Assoc. Botanist and Introduction.

Thank you, Mr. Russell, for the scientific facts about this interesting South American fruit, the jamberry. We are sure our readers are as interested in your letter as we are.—Ed.

Tagging Suggestion

Gentlemen:

Here is a little suggestion for the amateur or professional fruit grower. In budding and grafting trees attach an aluminum chicken leg band on each and check the numbers. You will always find the variety as the aluminum will last.

R.3

Chicora, Penna.

H. L. Bollhorst

Vine Stored Grapes

Gentlemen:

Grapes can be conditioned and stored on the vines to remain in good condition for six weeks or over, after they ripen.

In 1945 the fruit of the Champanel variety had ripened on the vine to full color and flavor by July 5th. On that date all of the branches, on one vine were shortened to within two leaves or buds in front of the fruit clusters. The result: those clusters remained without further development or deterioration until August 20th—over six weeks after the pruning.

In this year, 1946, on the same vine that process was repeated by pruning July 8th. The result: the grapes remained in good condition until August 23rd, or 46 days after the pruning.

The Champanel is very acid until really ripe, which is a few days after it colors black. It then holds a delightful flavor. So it is important that this variety becomes full colored and attains full flavor before the described pruning is employed. The same procedure would probably be adaptable to many other varieties of grapes.

1719 Leo Hall St.

San Antonio 1, Tex.

Chas. F. Ward

Fire Blight

Dear Sir:

During the past two or three years a disease or fungi has made its appearance in this district, which the local horticulturists call fire blight. They claim that the only remedy is severe pruning, which is not very successful, since the trees become re-infected, apparently from the trees in the neighborhood.

If you have any information on the control of this disease, I would be very grateful if you would print it in your magazine.

So. Edmonton, Alberta

M. Reid

Fire blight is a difficult bacterial disease to control. Cutting out of infected parts is about the only control measure known. The parts must be burned, and the cutting tools disinfected after every cut to prevent re-infection. A can of formaldehyde can be carried for this purpose.

I don't know whether you are referring to apples or pears—both diseases are very much alike, and so are the control measures. The pear is very susceptible to fire blight, and the best method to overcome it is to plant resistant stock. The Old Home Stock is about the most resistant.

Grow the trees slowly so the wood is hard. Use little, if any, nitrogen fertilizer, or manure, or even mulch. When the trees look a bit yellow, then add moderate amounts of nitrogen.—Ed.

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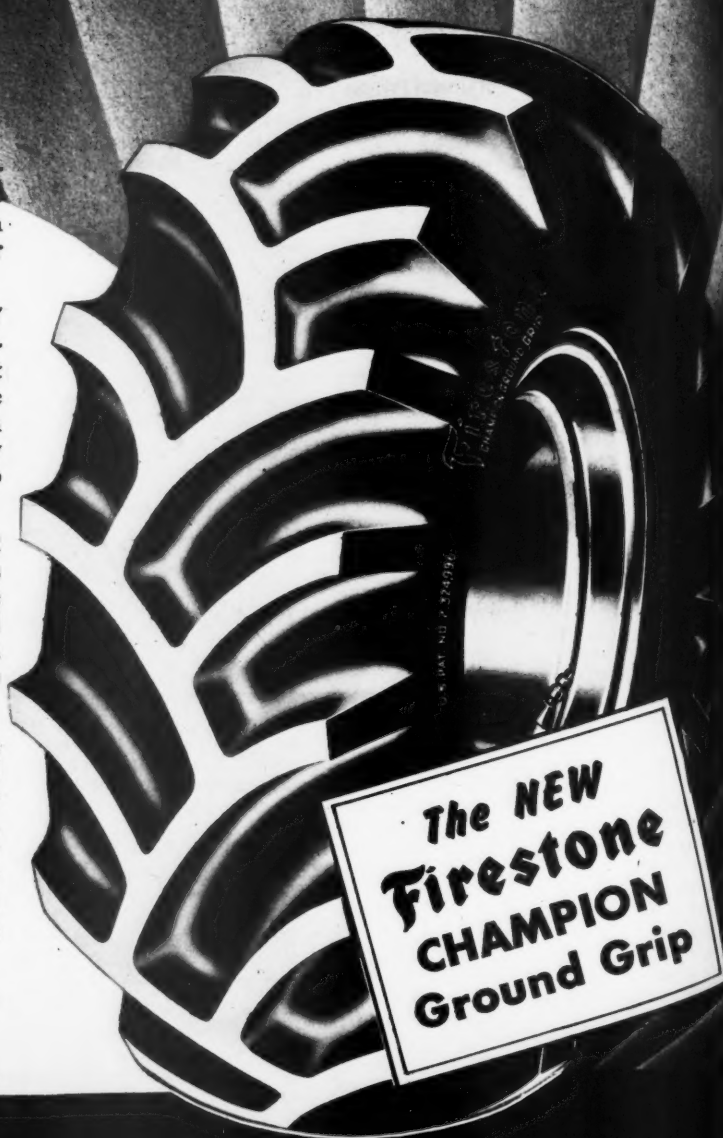
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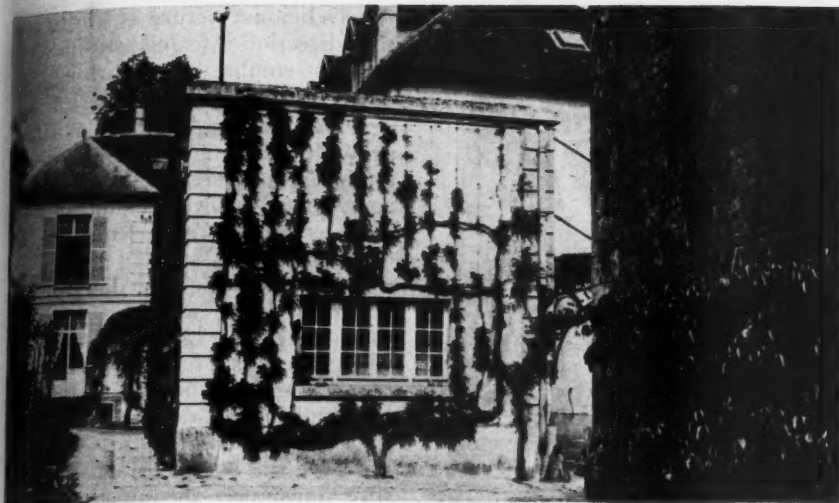
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In Europe, gardening takes on formal and elaborate proportions like this peach tree trained against a wall.

THE FRUIT GARDEN

By H. B. TUKEY

Michigan State College

THE old-fashioned home fruit orchard has practically disappeared, and properly so. It served a need at a time when all over the country men were testing varieties and locations for commercial fruit growing while still depending on wheat, corn, dairy cattle, and livestock for the main income. Some of the important fruit areas of the country were first proved by the home orchard. In a time when rapid transportation, storage, and distribution were not yet well developed, the home orchard kept the family in fruit that it would otherwise not have had, besides sometimes adding a small income.

But those days are past. The several acres devoted to the home fruit orchard are, for the most part, commonly neglected, are a menace to nearby orchards, provide a deluge of fruit at one time and none another, and are generally not satisfactory.

Yet the farm without fruit misses something. There should be some way to increase the use of fruit on the farm—even on the fruit farm. And to this end the writer should like to propose the "fruit garden," not unlike the vegetable garden in general outline, plan and thinking.

Such a garden is intensive, it occupies a limited area, it specializes on quality and diversity and wide range of usefulness, at the same time it minimizes neglect and the harboring of pests. It emphasizes the small fruits and small trees—perhaps dwarf trees. Europeans have long used this type garden successfully. It has a place, too, in America.

There will be those who will object

to any fruit on the farm, saying that the commercial fruit grower can provide enough. But this view is open to question. The best advertisement for a strawberry, a raspberry, or a peach is a good strawberry, a good raspberry, or a good peach. Too many families are unfamiliar with



Van Buren—one of the new, early grapes suitable for the home garden.

north temperate fruits. They need to have fresh fruits close at hand, get used to them, and ask for more.

Every fruit garden, like every flower garden and every vegetable garden, will vary with the likes and dislikes of the planter. There will be those who seek a dependable supply of fruit, even though mediocre in quality, at small effort, and others who prefer the choice flavors of the Fairfax strawberry, the McLaughlin

plum, and the Macoun apple. The writer would leave the principal supply of a standardized article to the fruit grower and would prefer in the fruit garden the supplemental interests of quality, size, season, shape, color, aroma, and flavor that the fruit garden alone can supply.

Unlike the fruit grower, the planter of a fruit garden has little choice of soil and site. If he does, he should select a well-drained slope, perhaps protected by buildings or a windbreak. It is common knowledge that trees near the protection of buildings often escape a spring frost. If the soil is heavy and inclined to be wet, plums and pears may succeed, whereas cherries will fail. Peaches prefer a light soil.

The home planter should be careful not to overdo. An area 100 x 100 feet sounds small, but it will do. The strawberry will receive first consideration—not too many, but an assortment perhaps starting with Premier, followed by Fairfax and ending with Catskill and the ever-bearing Mastodon and Gem. For freezing, Marshall is good. Twenty-five feet of four varieties each will produce a lot of berries.

The red raspberry will come next in interest, beginning with June, and following with Cuthbert, Marcy, Taylor, and the fall-bearing Indian Summer. A dozen plants of each is enough. For those who like the black raspberry, Plum Farmer is good. For those who like the purple raspberry, Sodus is best. The blackberries and dewberries had best be left out unless one has the time, space, and patience to wrestle with them—excellent though the fruit may be. For the currant, try Red Lake. For the gooseberry, try Poorman.

Grapes require a trellis, and for this reason are ruled out by some. Yet they may be grown against a building or over an arbor, and a trellis is not half as difficult as it sounds. A single vine each of the proper assortment will give much

(Continued on page 21)



A small spray rig that would be adequate for the use of the home fruit gardener. Easily handled by one man.



Ewing Galloway Photo

PLANTING TRENDS IN WASHINGTON

By JOHN C. SNYDER
WASHINGTON STATE COLLEGE

NORTHWEST fruit growers were not in the business very long before they saw the advantage of growing varieties that can be grown especially well in this area. As in other areas, growers here started out with almost every variety under the sun. In the early days it was not uncommon, for example, to find as many as 40 varieties of apples in one orchard. Today there are many growers who have as few as four.

The elimination of undesirable varieties was probably more relentless with apples than with most other fruits. The number was reduced from about 50 to 6 or 8 per orchard. This does not mean that there were never more than 50 varieties grown commercially in the area; on the contrary, there probably were more nearly 150. It may be surprising to know that even today at least 43 varieties are being grown here commercially.

Apples

A recent survey including a good average cross section of apple growers indicates that Delicious, Winesap, Starking, Rome, Jonathan, Golden Delicious and Richared in the order named are the predominating varieties. This survey reveals some interesting information about future plantings also. Of the 33 Delicious growers reporting, only two would discard Delicious and these would

replace it with Starking. Furthermore, there are as many growers increasing their Delicious plantings as are decreasing them. It would seem, therefore, that in the minds of growers at the present time Delicious is scarcely holding its own.

We have quite another story with Starking as shown by the fact that of 31 Starking growers, 28 would increase their acreage substantially, some going as high as 100 per cent. With Richared, on the other hand, there is a tendency to discard them. With Shotwell Delicious there is a tendency to increase. It is clear that

the Delicious picture is shifting in the direction of red strains with greatest emphasis on Starking.

With Golden Delicious the tendency to increase is almost as strong as with Starking. There is also a tendency to increase Winesap acreage—some growers indicating as high as 50 per cent. Rome, on the other hand, is scarcely holding its own. Those who are discarding it outweigh those who are increasing the acreage. In the case of Jonathan the tendency to decrease outweighs the tendency to increase. This does not give the complete Jonathan picture inasmuch as most Blackjon growers plan to increase their plantings of this variety.

Stayman has almost completely gone out, as indicated by the fact that 10 growers would discard it to one that would increase it. With Yellow Newton and with Yellow Transparent, the situation is different. With these there is a slight tendency to increase.

While growers differ in their opinions about planting the above-mentioned varieties they unanimously favor the elimination of Arkansas, Baldwin, Ben Davis, Spitzenburg, Grimes Golden, King David, White Pearmain, and Winter Banana. It is clearly evident that the process of reducing the number of varieties is still in operation.

Peaches

Approximately 30 varieties of peaches are grown commercially in the State of Washington, as revealed by a survey including a good cross section of growers in that area. Elberta is the predominating variety and J. H. Hale is next on the list. Others in the order of their importance on an acreage basis are Golden

(Continued on page 16)

VIRGINIA PLANTINGS

VIRGINIA is not planting many apples—perhaps not as many as she should. Old orchards are going out and a great many of what might be termed as the middle aged orchards are declining. That is, they are in the hands of just average growers. Of course, the good growers are keeping their orchards in tip-top shape, even at old age. But the run-of-mine orchards are slipping, getting just enough care to keep them functioning, but too often without a profit. The orchard that makes money in this state is the one that gets all the care it needs. It's kept in tip-top shape.

Fortunately, what planting is being done is mostly by men who have the best orchards. The mediocre growers are not adding much to their acreages. Such growers as Senator Byrd and many others around the State are planting largely the Red Sport varieties; Stayman, Delicious, some Golden Delicious, some Jonathan, in many a few Red Romes, right many Red Yorks, and of course, some old-time Winesaps in the Piedmont. They're sticking pretty close to the commercial list.

Now is really the time for the better class growers to plant in Virginia, but for fear of starting a planting boom which would attract a lot of speculators to the orchard business, we're keeping rather quiet about planting; perhaps more than we should.—*W. S. Campfield, Sec'y, Virginia State Horticultural Society.*

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USDA photo by Ackerman



Case photo

WHAT OHIO GROWERS ARE PLANTING

By FRANK H. BEACH
OHIO STATE UNIVERSITY

WHAT varieties are commercial fruit growers in Ohio planting? To get an answer on this trend, my office in the Agricultural Extension Service, Ohio State University, conducted a sample survey of growers intentions and received returns from a very good sample of successful fruit growers, well distributed in the important commercial fruit growing areas of Ohio. The variety list in Ohio is naturally quite long because Ohio is neither a northern or a southern state, and most of the commercial varieties grown in the Central and Northern states find some spot in Ohio where a favorable environment is secured.

Returns were summarized from 52 commercial apple growers. Their preference for varieties in new plantings listed by percentage preference is as follows:

Rome Beauty	24%
Stayman Winesap	19
Delicious	18
Jonathan	17
Baldwin	15
Golden Delicious	9
Cortland	9
Grimes Golden	8
McIntosh	8.
Wealthy	7
Yellow Transparent	5

It is only natural in a state like Ohio that Rome Beauty still gets the nod for first choice because spring frosts are the greatest limiting factor

in apple production over the state of Ohio, and Rome Beauty being a late, irregular bloomer comes through frosty spring weather better than any other single variety over a period of years. There is a downward trend with this variety on local markets because many consumers prefer the eating quality and cooking quality of several other varieties. However, when well grown and well handled, there is still a good demand for Rome Beauty, particularly in wholesale markets, and up to date the variety has been profitable and so it will be planted as long as it continues to be a profitable variety. It also tends to bear rather regular crops, since it has a habit of bearing a heavy percentage of a single crop both from terminal buds as well as from spur buds and often one crop will be predominately from spurs and the following year it will be predominately from terminal buds. A few commercial growers in Ohio still prefer the old-type striped variety on sites and soils where they have secured very satisfactory fancy color and finish with it. However, for many average locations and decidedly measuring the choice of most fruit growers who want to plant Rome, a preference is indicated for one of the Red strains, with the Gallia Beauty, an Ohio strain, preferred. A number of other strains are being planted and it is not known at present which of the red strains

will actually be preferred over the long run. However there is a definite preference for one of the Red Romes in most of the new plantings.

Stayman Winesap is so well liked as a general purpose apple for late fall and winter trade, that it is being planted second to Rome, with a preference for red strains with Stamared best liked so far among the color sports. There would be even a greater tendency to plant more Stayman were it not for the fact that on many soils, particularly the shallower type soils in Central and Southern Ohio there has been too much of a tendency for growth cracks developing with this variety. In plantings where this has been a serious fault there is a decided preference for the Turley for an apple of this type. In spite of the fact that in both 1945 and 1946, two very early springs accompanied with serious frost damage, have reduced crops of Delicious, Ohio growers still feel that they want to take a chance with more Delicious, and it is third among apple varieties being considered for new plantings, with a decided preference for the color strains, such as Starking and Richared. Delicious is fussy as to its requirements on site and soil and does best on relatively high sites with splendid air drainage where frost hazards are minimized. Deep, fertile, well drained soils are producing best yields and quality.

Jonathan is especially liked in Central and North Central Ohio and does splendidly in the lakeshore area, particularly west of Cleveland, so ranks fourth in grower preference on new plantings. Very little difficulty has been experienced in growing good color on Jonathan, so there is relatively little interest in planting the color sports of this variety. However, there is a preference indicated by about 10 per cent of the growers for color strains such as Jonared and the Blackjon.

Baldwin has been losing ground
(Continued on page 16)

ROOTSTOCK DEVELOPMENTS

TWO GROWERS AND TWO EXPERIMENT STATION WORKERS DISCUSS OUTSTANDING ROOTSTOCK DEVELOPMENTS

PEACHES AND GRAPES IN THE SOUTH

By E. F. SAVAGE

Georgia Agricultural Experiment Station

THE question of rootstocks is an ever important one in fruit production in the southern states. Unlike some other parts of the country, the ordinary rootstocks used with peaches and the bunch or American type grapes have not proved satisfactory in many cases. It is about these two fruit crops that this article is written, with attention first given to peaches, since this is the most important fruit crop of the Southeast, exclusive of the citrus fruits.

Peach growers in the South, where the soils are light textured, well aerated and deep, have long had a serious problem in root knot of peach which is caused by the nematode, *Heterodera marionii* (Cornu) Goodey. The seedling most commonly used by nurserymen as the understock is grown from seed of the so-called "natural" peach of the southeastern mountain areas of the Carolinas and Tennessee. These seeds are small, are sold by the bushel, and consequently are very popular with nurserymen since comparatively large numbers of seedlings are obtained at low cost. This stock is a successful one, producing, insofar as known, uniform trees of excellent vigor in all areas of the South where the soil is not infested with nematode. During more recent years many nurserymen have planted seeds obtained from nearby canning plants to produce seedlings for use as understocks. They have turned more and more to this source because of the comparative scarcity of the Tennessee or Carolina "natural" seed. These seeds are usually from fruits of the Elberta variety. Heterogeneity undoubtedly exists in the seedlings thus obtained. However, insofar as known at present, there are far more important causes of tree variability than that produced by variation in the understock grown from peach seeds of the same variety. Since both of these

rootstocks are very susceptible to root knot, they should not be used on land where there is nematode infestation.

Fortunately, within the last fifteen years considerable work has been done by research workers in California, Georgia, and South Carolina on the testing of nematode resistant stocks which would be suitable for peaches. Of the many tested two are



Rome on Virginia Crab. Set Spring 1936

outstanding; namely, the Shalil (FPI 63850) and the Yunnan (FPI 55886). Both of these have remained practically free of nematode infestation when planted in infested soil. When used as understocks, both produce vigorous trees that produce good crops.

The Shalil rootstock was originally obtained from Kurram Valley, North
(Continued on page 23)

A GROWER SPEAKS

By W. J. WELDAY

WHEN the crippling freeze of 1936 hit, we turned to the so called hardy stocks in earnest. Since from a previous experience we were pretty well grounded in the rudiments of top working, there was nothing to fear from the mechanical end of the undertaking.

Hardy stocks had established themselves for hardiness, including cold resistance, and limited use had been made of Virginia Crab to overcome the collar weakness of Grimes. The most striking evidence of their worth was the Campbell planting in Iowa 1893-94. Checks were made in 1934 and it was observed that the hardy stocks far outlived the others. For example, four per cent of Grimes on French Crabs were alive, while on Virginia Crab seventy-two per cent were alive. Altogether, experience indicated that the hardy stocks were outstanding in vigor, productiveness, disease resistance, and long life in the top worked variety.

Accordingly, we replanted about one fourth the orchard, setting Virginias and Hibernals directly in the row between the older trees, and in heavy sod. We used varieties in various combinations, using different aged trees, and some on hardy Baccata roots. We got some disastrous but

valuable experience. We found Virginia Crab not as well adapted to various varieties as Hibernals. We do not like Rome or Delicious on it, and of course, never Stayman. For one thing, it grows too fast, outgrowing the introduced variety, especially Wealthy. I have actually seen branches too small to bud one year that were too large the next. We do

(Continued on page 18)

Own root Rome. Set Fall 1936



AMERICAN FRUIT GROWER



Fig. 1



Fig. 2 (See text for explanation of photographs.)

ANOTHER CONFIRMS

By D. B. PERRINE

MY interest in under stocks for fruit trees started many years ago. My father who had been a nurseryman among his other horticultural activities, would point out to me the unusual stock and top combinations as we came upon them in the orchards. The curiosity thus aroused has not been satisfied as yet—too many of the mysteries remain unsolved. Most of those orchards through which we walked are now gone and younger trees stand in their stead. Some of these new trees were "home made" while others came from commercial nurseries. In the first case the stock to top relationship is known, while in the latter it is uncertain.

In the early days of orcharding, before insect and disease control had to be practiced, and while hand labor was relatively cheap, that under stock which produced the largest top was generally considered best for a particular variety. Notable of these combinations were Jonathan on Minkler, and Grimes Golden on Northwestern Greening, which produced trees comparable in size with those grown in more northern climates. But it became evident that under present day conditions, trees which require equipment for spraying and picking that looks like "Hook and Ladder Fire Company No. 1" were not the most desirable. Nor does the "speed squirter" or spraying from an airplane, solve the picking and pruning problems with such large trees. So the quest has altered slightly and the search is now for a sturdy tree of less than normal height which will produce large quantities of big, highly colored fruit annually.

The progress of knowledge on the under stock and top relationship is very slow because most growers plant only three or four orchards in a lifetime. Also, in many instances, only

the top is known, and ignorance multiplied even three or four times still gives ignorance. The problem is still further complicated by the fact that an under stock which does exceedingly well in one climate or soil, may do very poorly in another, so that success or failure in one instance may not mean universality of application. Investigators have not determined as yet just how much of a given result can be traced to under stock, and what portion to the top. Very likely, the ratio is not a constant value, but probably varies with the variety of the top

(Continued on page 18)



A spray mast in operation. Should masts be made taller or the trees grow shorter?

STURDY UNDERSTOCKS IN THE NORTH

By J. A. McCLINTOCK

Purdue University

AS the title over these articles suggests, progress is being made in the development of rootstock. Slowly but surely through the collaboration and cooperation of numerous workers in all parts of the country, superior rootstocks are being evolved. Primarily, tree fruit stocks are considered of general public interest. But as most tree fruits belong to the rose family it will not be out of order to record rose rootstock developments also.

The late Professor Tom Maney developed a superior stock for garden roses, in the vigorous Multiflora-Blanda hybrid rose. The fact that this hybrid has shown resistance to root-knot nematode under field conditions in Texas, increases its possibilities. Tests of this hybrid rose stock in nematode infested soil in greenhouses at Purdue substantiate the Texas findings.

Research at Purdue sponsored by

the Society of American Florists indicated the Western grown Manetti rose stocks were not a serious source of rose virus contamination as had been suspected. A thornless strain of multiflora has been selected to facilitate budding for virus indexing.

Cold hardiness of small seedling peaches has frequently been observed in their resistance to low temperature. They produce fruit at times when adjoining cultivated varieties are injured. The writer contends there is need for continued research for hardy peach stocks such as the New Jersey Station is conducting in the East and the writer and others are pursuing in the Middle West.

As a result of inspecting commercial cherry growing sections of Wisconsin and Michigan, this summer, the writer observed that both sour and sweet varieties of cherries on Ma-

(Continued on page 24)

TO DIVINE THE FUTURE....

STUDY the past if you would divine the future was one of the many wise things said by Confucius. In that vein, the **AMERICAN FRUIT GROWER** gives the **NATIONWIDE FRUITS** space this month to a presentation of the surveys conducted from 1938 to 1940 to determine the most popular varieties then being planted. Each year a different fruit was surveyed.

With interest in planting now at a seasonal high, growers are thinking of the best varieties to assure the greatest profits when the orchards now planted come into bearing. This presentation, we feel, will be of real value in determining what is coming into bearing in the near future.

It was thought that this would be of more help to the grower than a survey conducted at this time. Such a survey, we feel, would not present a true picture of the planting situation because of the shortage of nursery stock and the resultant unsettled state of planting.

However, it is planned that a survey will be made in ten years from the date of the original survey of each type of fruit, beginning in 1948 with apples. This ten year lapse should give time for changes in variety trends to show.—Editor.

APPLES

IN the 1938 apple survey, Yellow Transparent was outstanding among early varieties, being most popular in all but the North Central states where Duchess led; and in California, where Red Astrachan led.

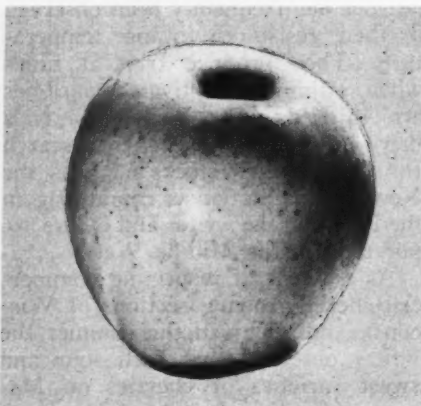
In the Northeast, Early McIntosh was runner-up to the favorite, Yellow Transparent.

In the South, Red June was second, followed by Red Astrachan and Duchess.

In the Midwest, the order after Yellow Transparent was Duchess, Red Astrachan, Lodi, Red June with Melba in sixth place. While not an early apple section, the Northwest reported Yellow Transparent ahead by more than two to one, with Red June, Red Astrachan, Duchess and Early McIntosh ranking in the order named.

Reflecting sectional planting in a more definite pattern, the midseason variety findings show McIntosh the

Yellow Delicious



most popular apple. Macs led in the Northeast, Northwest and Midwest. Second most popular midseason apple was the Wealthy, since it ranked first in the North Central region, and second in the South, the Midwest, and Northwest, and third in the Northeast.

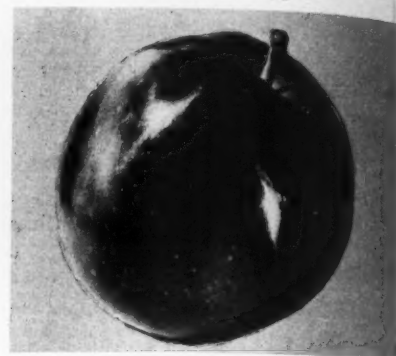
The Cortland, a comparative newcomer, ranked third, being particularly popular at the time of the survey in the Northeast, the Midwest and the North Central States.

In the midseason variety the rankings were, in order, McIntosh (first by a wide margin), Wealthy, Maiden Blush, Summer Rambo, Snow, Kendall, Gravenstein, Macoun, and Wolf River.

For the nation as a whole, the greatest interest probably centers on late apples. Delicious led the field by a two to one margin. It led in all sections but the North Central, where Northwest Greening held first place. Others were, in order, Jonathan, Stayman, Rome Beauty, Grimes Golden, Baldwin, Northern Spy, Wine-sap, York Imperial, Rhode Island Greening, Yellow Newton, Northwestern Greening, Winter Banana, Yellow Bellflower, Wagener, Ben Davis, Tompkins King, Fall Pippin, and Esopus Spitzenburg.

This article cannot explain why certain varieties are more popular than others in some areas, nor can it explain why some varieties have become less popular than others. General trends may be noted, and helped growers at the time in their planting selections. The survey still is of value for showing what is in the ground now, and as an index of the trend in variety selection.

MacIntosh apple



PEACHES

The Elberta, chance seedling of the Chinese Cling peach, was the nation's favorite variety in the survey conducted in 1939. Planted by Samuel Rumph in Marshallville, Georgia, late in the 1870 growing season, it is known in every peach section of the United States.

Second in popularity was the Halehaven, at the time just ten years out of a cross between J. H. Hale and South Haven. The Halehaven is the result of controlled scientific breeding.

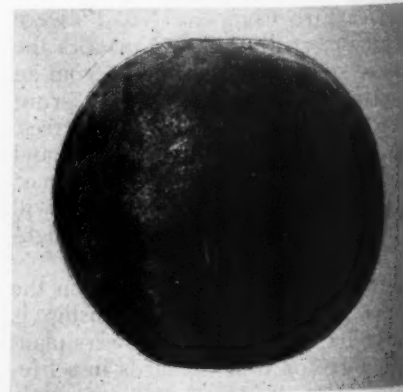
Other varieties which make up the 12 yellow-fleshed, midseason freestones that led in the survey are J. H. Hale, Golden Jubilee, South Haven, Early Elberta, Hardee, Red-elberta, Shippers Late Red, Early Crawford, Rio Oso Gem and Gage, in the order named.

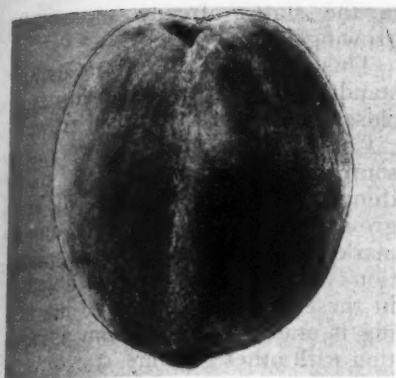
Elberta was the leader sectionally among mid-season semi-free and freestone yellow-fleshed varieties, except in the Northwest, where Red-elberta led, and California, where Rio Oso Gem was first.

Golden Jubilee had the greatest favor in the Northwest, where it was second, but it ranked among the leaders in all sections, dropping as low as seventh only in California.

In the early variety of yellow-

Hale peach





Elberta peach

fleshed freestones, Rochester was 10 times as popular nationally as its nearest competitor, Oriole. Other leaders, in order, in this class, were Fisher, St. John, Dewey and Triumph. Rochester led in every section in this class.

Topping its nearest contender by 4 to 1 among late, yellow-fleshed freestones Late Elberta headed a list followed by Krummel October, Late Crawford, Hal-Berta, Salberta, Gold Drop, Salwey, Augbert, Lemon Free, Crosby, Halate and Smock. Late Elberta carried its lead into the sectional breakdown, where it was bettered only by Late Crawford in the Northeast, and South, Salwey and Krummel October in California and Late Crawford and Salwey in the Northwest.

Among yellow-fleshed clingstones, Mikado (June Elberta) was a two to one favorite. Other leaders, in order, were Peaks, Palore, Arp, Marigold, Sellers, Phillips, Tuskena and Buttercup. Most of these varieties are planted in the South and in California.

Although Champion led among white-fleshed, freestone early varieties in all sections except the South and Northwest, Belle of Georgia outclassed it in national totals due to heavy southern plantings. After Belle and Champion, white-fleshed freestone varieties listed, in order, were Hiley, Carman, Delicious, Comberland, Alton, Radiance, White Hale, and Iron Mountain.

The white-fleshed clingstones showed the greatest variation in sectional planting for any of the groups. Greensboro led in the Northwest, Early Wheeler (Red Bird) in the Midwest, South and North Central States, Mayflower in California, and Alexander in the Northwest. Ratings of varieties in the South were the same as the national average. In order, they are Early Wheeler, Mayflower, Early Rose, Heath Cling, Greensboro, Uneeda and Alexander. Some Florida and Texas growers concentrated on Hart Cling and Best May.

STRAWBERRY RATINGS BASED ON NURSERY SALES

1940 Survey

NATIONAL

1. Blakemore (yellows resistant)
2. Missionary
3. Klondike
4. Howard 17 (Premier)
5. Dunlap (Senator Dunlap)
6. Mastodon
7. Gem
8. Dorsett
9. Aroma
10. Catskill
11. Fairfax

Early Crop Region (Fla., Ala., La., Miss., Tex.)

1. Missionary
2. Klondike
3. Blakemore (old strain)
4. Texas

Second Early Crop Region (Ark., N. C., S. C., Tenn., Va., Calif.)

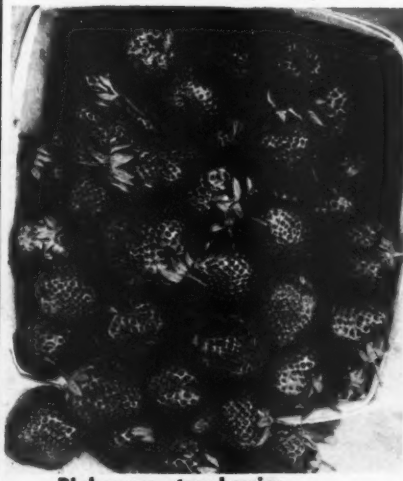
1. Blakemore (yellows resistant)
2. Missionary
3. Klondike
4. Aroma
5. Champion Klondike
6. Blakemore (old strain)
7. Dorsett
8. Howard 17 (Premier)

Intermediate Crop Region (Delaware N. J., Md., Ky., Ind., Ill., Kans., Mo., Iowa, Okla., Calif.)

1. Blakemore (yellows resistant)
2. Howard 17 (Premier)
3. Dorsett
4. Catskill
5. Fairfax
6. Aroma
7. Chesapeake
8. Gem
9. Mastodon
10. Dunlap (Senator Dunlap)

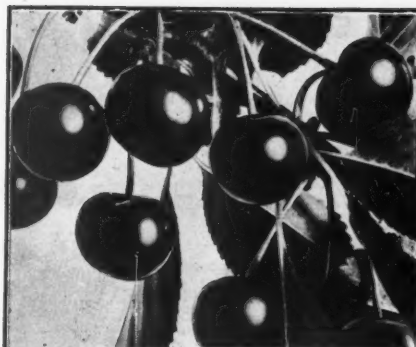
Late Crop Region (N. Y., Pa., Ohio, Mich., Wis., Minn., Wash., Ore.)

1. Dunlap (Senator Dunlap)
2. Howard 17 (Premier)
3. Catskill
4. Dorsett
5. Gem
6. Mastodon
7. Rockhill
8. Fairfax



Blakemore strawberries

USDA photo from Cir. 93



Montmorency cherries

J. C. Allen photo

CHERRY RATINGS BASED ON NURSERY SALES

1940 Survey

SOUR CHERRIES—NATIONAL

1. Montmorency
2. Early Richmond
3. English Morello
4. Richmorency

Pacific Coast Region

1. Montmorency
2. English Morello
3. Early Richmond

Great Lakes Region (N. Y., Ohio, Mich.)

1. Montmorency
2. English Morello
3. Early Richmond
4. Richmorency
5. Giant Montmorency

SWEET CHERRIES—NATIONAL

1. Black Tartarian
2. Napoleon
3. Windsor
4. Bing
5. Schmidt
6. Lambert
7. Governor Wood

Pacific Coast Region

1. Napoleon
2. Bing
3. Black Tartarian
4. Lambert
5. Black Republican

Great Lakes Region

1. Windsor
2. Black Tartarian
3. Napoleon
4. Schmidt
5. Governor Wood
6. Bing
7. Lambert

DUKE CHERRIES—NATIONAL

1. May Duke
2. Late Duke
3. Royal Duke

Pacific Coast Region

1. Late Duke
2. May Duke
3. Royal Duke

Michigan

1. Late Duke
2. May Duke

New York

1. May Duke



Photo by McManigal

PLAN YOUR SITE

Success or Failure of Orchard Depends on Choice of Site

By JONAS HOWARD

MUCH of the success and failure of any orchard is determined before it is planted—on the very day the site is chosen, and the varieties selected for planting.

Many of the reasons for crop failure are inherent in the physical characteristics of the orchard site. Failures due to frost caused by improper air or water drainage, poor soil or sub-soil, varieties unsuited to the soil and many similar reasons can often

be avoided or eased by proper site selection.

Other factors assume equal importance with these growing conditions—the location of the market, methods of shipping, demand of local markets, availability of other markets for large crops—all of these things must be balanced with the growth factors, and a compromise reached that will place the orchard in what is the best overall position.

Generally, fruit should be grown in a fruit area—the many fruit counties

in the states already successfully growing fruit.

This is a good idea from another standpoint; a grower benefits from close association with other growers.

Contact with other growers is a source of learning a great many things about the business of fruit growing. Fruit societies are common, markets are closer, and transportation is already pretty well established in these areas. Cooperative marketing is another benefit from association with other growers.

One of the first things to be decided is the condition of the soil and sub-soil. The subsoil is usually considered of more importance, because here the roots grow and burrow, reaching for the nutrients and minerals of growth.

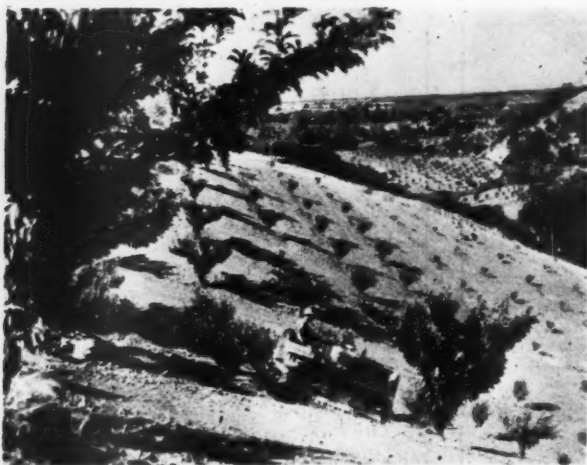
The best soil is a porous one that permits easy burrowing of the roots, air circulation, and water movement. It is a good idea to take samples of the soil—about 5 or 6 feet deep—over the area of the intended orchard, to make sure that the sub-soil is not rocky, or does not contain too many high deposits of clay that cause high water tables, drowning out the roots.

Soil should be tested, even if nearby orchards are successful, because peculiarities of soil deposit may make one location excellent, while the next one is ruined by high clay sub-surface hills.

The soil must also be well-supplied with the many nutrients essential to plant growth. Some of these can be added by fertilization. This is one of the factors that may be compromised with location as to market, and fruit growing area, if the soil is not completely without nutrients, and is not lost to erosion from starvation. An experienced grower, or the county agricultural agent would be the best helpers in deciding these important factors.

The physical nature of the site—its position relative to valleys, hills,

Planting on a slope for drainage of air and water. Photo from Caterpillar Tractor Co.



A windbreak of Athel trees in a Texas citrus grove.



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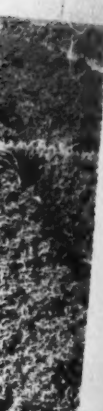
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GROWER

PLAN YOUR SITE

and bodies of water must be well-considered.

The best water protection is afforded by a deep lake, which tempers the climate so that temperatures are kept up during the normal autumn frost times. Often the cooling effect of the lake in the spring retards the bloom long enough to avoid the early spring frosts.

Generally this frost protection is effective from 200 to 300 feet back off the lake, if the shore line rises. On hills around a lake, slopes away from the lake show less rainfall, and less temperature control than slopes toward the lake.

Much consideration must be given to locating the orchard in an area with proper drainage of air. The movement of air down a slope is often the cause of preventing frost.

However, pockets may form in low spots, or behind trees where frost strikes.

In an area of high winds, wind damage to trees, blossoms, and fruit must be guarded against. A wind-break row of trees planted on the side of the orchard facing the prevailing wind will often help solve the problem. Winds may also delay spraying for dangerously long times because of high winds, thus jeopardizing the crop.

These conditions are local, and the only good advice is to consult the local county agent, whose files contain the proper information for the area. He can say what the frost conditions are in your area—he can advise you how to plant best to avoid the frost injury often caused by location.

GRADE YOUR SITE— ASK YOURSELF THESE QUESTIONS

Climate

Is the land high, providing good air drainage for frost prevention?

Is it near a large body of water, preferably on a North slope facing water?

Are hailstorms prevalent? Rainy bloom weather? Strong harvest winds?

What is the record of nearby orchards regarding late spring frosts and winter kill?

Soil

Is the soil deep, well-drained?

What is the history of the soil—has it been worked out, has it been well-managed?

What type of vegetation is now growing? Are poor land weeds like thistle and ragweed growing? Or rich land plants like clover and blue grass?

What do soil samples sent to the state experiment station for analysis reveal?

What is the PH of the soil (Acidity)? Is it high enough to permit the growing of a good cover crop?

Do adjacent orchards on similar soil thrive?

What is the soil type? Is it considered good for fruit growing?

Is sufficient water available for filling spray tanks?

Market

How close is the site to a large market?

How close to a well-traveled highway for a roadside market?

Are several methods of transportation available to promote competition and reduce cost?

Are the roads to market good?

Animals, Diseases, and Insects

Will mice, rabbits, deer cause insurmountable problems?

Are there nearby abandoned orchards to cause difficulties in pest control?

Are nearby orchards affected with blight?

Other

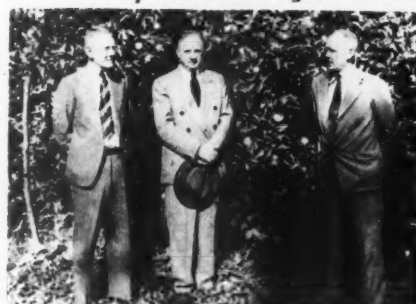
Is labor available in the area?

Is there a well-established community life with good schools, churches, etc.?

What does your county agent say? What does the state experiment station say?

SENATOR BYRD HOLDS ANNUAL PICNIC AGAIN

By Meador Wright



Senator Byrd with two guests from the U.S.D.A., Dr. Magness and Dr. Hough.

THE annual Byrd Picnic, which had become an institution in the Shenandoah apple district when the war interrupted, was held again this year after a five year lapse. Some 2,000 apple growers and friends of Senator Harry F. Byrd and his brother Tom attended. The picnic was held August 31 on the Rosemont orchard near Berryville, amid thousands of apple trees literally breaking under the weight of one of the best apple yields in years.

Blackman Moore, president of the Virginia Apple Commission, empowered by the present Virginia Legislature to levy a tax for advertising apples, explained the workings and ultimate aims of the legislation. The act levies a tax of one and one-fourth cents a bushel on apples packed within the state. To avoid being held unconstitutional, the Virginia tax is a franchise for the privilege of packing apples and must be paid by the packer, not the grower. The packer is required to keep accurate records of all apples packed. The report is due in July of each year with one-half the tax. The remainder is due on May 31 of the following year.

Mr. Moore explained that while the tax paid by Virginia packers will naturally be used to advertise local apples the promoters of the legislation had a more far-sighted aim than improving the competitive position of Virginia apples. It is hoped, he said, that other states will pass similar legislation and the resulting campaign will tend to increase the national consumption of apples. He pointed out that today there are only one-half the apple trees of 25 years ago, whereas in other fruits, particularly citrus, bearing trees have increased. Since it takes close to 15 years before new plantings become a factor in increased production, apple growers have a long period of protection ahead. If total consumption can be increased by advertising while production is constant good prices are bound to prevail.

PLANTING TRENDS IN WASHINGTON

(Continued from page 8)

Jubilee, Early Elberta, Hale Haven, Candoka, Fay Elberta, July Elberta, Late Elberta, Early Crawford, Red Haven, Redelberta, Slappey and Improved Early Elberta.

There is a definite tendency to increase Elberta and J. H. Hale plantings; and the tendency is stronger in the case of Elberta. There is a slight tendency to increase Golden Jubilee, but with Early Elberta it is 50-50 for and against. Halehaven and Candoka are definitely losing out—Halehaven with slight dissension but Candoka unanimously. With July Elberta and Red Haven, on the other hand, all indicated intentions of increasing. With Fay Elberta those who would increase it outnumbered those of the contrary opinion. The decision was against Early Crawford and Redelberta, with all agreeing that these should be discarded. The same opinion was expressed about Krummel, Late Crawford, Slappey, Triogem, Wahlbert, Rio Oso Gem, Sungold, Valiant, Fisher, Salway and Sunhigh also.

With peaches there seems to be a fairly clearcut tendency to extend the season with varieties of the Elberta type. In this endeavor greatest emphasis is being given to the forepart of the season.

Peach planting has been very active during the past 4 or 5 years. Interest in processing freestone peaches in the Northwest, and the fact that considerable good peach land has been made available recently, account at least in part for the recent plantings.

Strawberry

In the case of strawberries we have almost a one-variety proposition. Marshall has long been and still is the predominating variety. Its popularity is now being threatened by yellows and some other troubles, however, Brightmore, while it has many faults, stood well above any other variety except Marshall in a recent survey.

Growers intending to increase plantings are looking mainly to Marshall with Brightmore, Redhart, Narcissa, Catskill, Rockhill and Gem receiving some consideration. The acreage has been increased approximately 50 per cent during the past three years.

Pears

Bartlett planting became fairly active prior to the war and has remained as much so since that time as available nursery stock permitted. Interest in planting Anjou became fairly firm within the past two years

and is still in that stage as much so as nursery stock will permit. The Anjou acreage has not been increased appreciably and probably will not be immediately.

Apricot

Apricot planting has been fairly active almost since the beginning of the war. Much of the land made vacant by the removal of apple trees previously has been planted to apricots. In addition to this land, considerable new land has been made available. The bulk of the new plantings have been of the Moorpark and Tilton varieties. The Riland was used in a few instances to supply the very early fresh market.

Cherries

During the early part of the war interest in sweet cherries was rather inactive. Since that time as buying power increased they have been in

great demand. Interest in planting followed immediately and has remained fairly active up to the present time. Plantings have consisted mainly of the Bing and Lambert varieties with some of the Royal Ann being included also.

Within the past year or two there has developed interest in the sour cherry industry. The total acreage is not great, but still enough to be of some significance.

Raspberries

There has been a fairly active interest in planting raspberries. It is the red raspberry that is being considered. The acreage has probably increased 25 per cent during the past five years. Plantings have been primarily of the Washington variety which is very much like Cuthbert except that it is hardier and more resistant to raspberry mosaic.

WHAT OHIO GROWERS ARE PLANTING

(Continued from page 9)

for a generation in new plantings but it still ranks fifth because Cleveland is probably the best Baldwin market in the world and many plantings of Baldwin through northern and northeastern Ohio have been reasonably satisfactory after full bearing has been attained. You can get quite an argument among fruit growers over planting Baldwin. Considering its habit of coming into bearing very late in life, and often bearing irregularly, and oftentimes producing a heavy percentage of fruit showing "Baldwin Spot," it is really remarkable that it still attains this preference rating for new plantings. However, the new plantings will probably be mostly on sites and soils and in areas where past performance has indicated reasonably good success with Baldwin.

Golden Delicious is still increasing in importance, particularly since refrigerated farm storages have increased in number and better storage can be given this exacting variety. The higher sites, particularly in Central and Southern Ohio are growing the largest, best colored Golden Delicious, but here and there over the state it is doing very well and is now the preferred yellow variety for late fall and winter use. Its early bearing habit and productiveness as a young tree appeal to many growers in new plantings.

Grimes Golden is still liked, especially in Central and Southern Ohio for the fall trade, but it has not done well as a cold storage variety, and is wanted in somewhat smaller volume than a few years ago. Southern

and Western markets take it best.

Ohio consumers are developing an appetite for a McIntosh type apple, and since Ohio is a little too far south to grow the top McIntosh that are produced in Northern Michigan, New York and New England, there is a tendency to make Cortland relatively more important in new plantings in Ohio than McIntosh, with the present sample trend indicating 9% Cortland and 8% McIntosh wanted in new plantings.

Wealthy has been productive and growers still like to plant a reasonable quantity of this variety with the trend increasing with the advent of stop-drop harvest sprays and better refrigerated farm storages to give a longer marketing season on this variety. Ohio is pretty far north to be important as an early apple state, but nevertheless a few yellow Transparent are wanted, chiefly because of the demand for a good sauce apple at this season of the year, and the survey indicated that 5% of the new plantings will be Yellow Transparent.

Peaches

A sample survey was returned by 34 commercial peach growers which indicated the following variety preference by percentage for new plantings in Ohio.

Elberta	36%
Hale Haven	19
Shippers Late Red (Big Red)	15
Golden Jubilee	14
J. H. Hale (Halberta)	14
South Haven (Sun-Glo)	12
Salberta	9
Early Halehaven (Early Haven)	9
Early Elberta	8
Belle of Georgia	8
Red Haven	7

(Continued on page 22)

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GROWER



The Universal 'Jeep' Works the Year 'Round

Speeding Jobs, Cutting Costs for Fruit Growers

Check each season's jobs against the versatility of the Universal "Jeep" and you'll see why you can save money with *one* vehicle that spreads its cost over so many uses.

The Universal "Jeep," with 4-wheel-drive and speeds from 2 mph up, serves efficiently as a light tractor for orchard work. Its low silhouette, ease of operation, maneuverability and sure-

footed traction on turns make the "Jeep" ideal for the fruit grower.

Used as a pickup or tow truck, the "Jeep" can go down rows without damage to trees. With its 2-wheel-drive, it speeds up trips to and from the orchard, hauling fruit or brush.

The "Jeep" serves as a handy runabout that takes you to any part of the orchard or into town.

With power-take-off points at center and rear, the "Jeep" will operate sprayers and dusters, and furnishes up to 30 hp for belt-driven equipment.

Examine the Universal "Jeep" at Willys-Overland dealers, and you'll see that it is the all-around answer to the fruit grower's needs.

Willys-Overland Motors, Toledo, O.



GET A UNIVERSAL 'Jeep'

With its low silhouette, 4-wheel-drive traction and easy maneuverability, the Universal "Jeep" speeds up brush clearing and does countless other orchard jobs every season of the year.



Figure 3



Figure 4

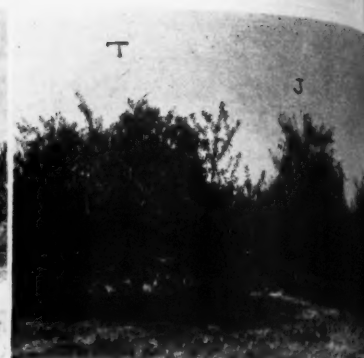


Figure 5

ANOTHER CONFIRMS

(Continued from page 11)

as well as with the kind of under stock used. An example of the effect of the under stock on the relative size of top produced by varieties is visible in our own orchards. In a block of trees about twenty years old Starking has outgrown Golden Delicious. These trees came from a nursery and the root stock is unknown. (Please refer to Figure 1, "S" for Starking and "G" for Golden Delicious.

Further up the same row in a younger section of the orchard, the Starking Trees are smaller than the Golden Delicious, both being upon Virginia Crab as an under stock. (See Figure 2). Again in the same block of trees it can be seen that Starking has out grown Gallia Beauty on the unknown nursery stock. (Look at Figure 3). With the same varieties in the younger trees it will be observed that the Starking still out grows the Gallia Beauty. (Shown in Figure 4). In other words, although Figure 2 showed that Starking did not grow too well on the Virginia Crab, it appears to do relatively better on it than does Gallia Beauty. In Figure 5, Jonathan has grown taller than Turley, both being on Virginia Crab.

Under our climatic and soil conditions resistance to drought is very important. It seems desirable to have the under stock a rugged, tough, and wide rooting sort. Where it is "congenial" with the top, Virginia Crab seems to answer these requirements. In order to take advantage of its good points for varieties which do not "like" it, an intermediate section placed between the under stock and the top may solve the problem. For example, a Golden Delicious section might be placed upon Virginia Crab, while above the Golden Delicious would be a variety "congenial" with it such as Starking which is not so good directly upon the Virginia Crab. The following experience led to the reasoning for trying an intermediate section in building a tree. Several years ago it was seen that Gallia Beauty was not doing so well on Vir-

ginia Crab, so this group of trees was grafted to Golden Delicious with the Gallia Beauty then becoming the intermediate section or variety. The unfavorable effect of the Gallia-Virginia combination was continued with the Golden Delicious top, although when it is placed directly upon Virginia Crab it is very good. Hence it seemed that if the mid-section could transmit an unfavorable reaction, it might logically be assumed that it could be made to continue a favorable one. Time may give the answer to that one. Several other midsection and top combinations are being tried, but all are too young to indicate any final conclusion.

Some of the East Malling clonal stocks are being tried under four of our commercial varieties. These are set as replants among older trees, and have not yet reached sufficient age to tell the whole story. Perhaps they will prove to be valuable, but it seems that many of our native crabs might

offer equal or greater chances of success, and should be tried by our federal and state investigators. A commercial grower has neither the time, nor the space, for much of such work. Many years must elapse before scientists can untangle some of these under stock and top combination puzzles. Perhaps some years could be saved if growers would try a few such puzzles in their own orchards, and then report their findings. Some replants used in this way could give the orchardist an interesting hobby, and a very good chance to "turn up" something of real commercial value, as well as lending a helping hand to the professional investigators who are attempting to solve this problem.

Extension workers who normally bring information from the experiment stations to the growers, might well keep one blank page in their note books, which could be used for the reverse process with the likelihood of mutual benefit.

A GROWER SPEAKS

(Continued from page 10)

not like the habit of lateral branches growing sharply at right angles, then abruptly vertical. A little fruit pulls the limbs over sideways. Again we learned never to attempt top working on these varieties except on very young trees, both because of the necessity of budding close to the center stock, and the tendency for the shock of later top working to throw the tree into premature bearing and pull it out of shape. The Baccata roots were unsatisfactory to say the least, showing variation, dwarfing, and a high degree of incompatibility, particularly with Hibernial.

By this time the whole matter of root stock came up for consideration. After all, of a thousand trees on the old French Crab seedling stock, probably no two were alike in form of growth, vigor, hardiness, disease and insect resistance. Progress has been made by using selected seedling stock such as Wealthy, Haralson, Whitney, Malinda, etc. But without artificial pollination of the seed these seedling

roots must be highly variable. So at most any reasonable cost, it would be worth while to grow own roots. This obviously is the perfect tree.

Hardy stocks have a tendency to throw their own roots if planted deep, and plenty of moisture is supplied. But to hasten and insure the process we can resort to forcing. This is perhaps best done by binding with a copper wire just above the graft (graft is preferable to bud) which chokes the old root, and forces "own" roots above the graft on the scion stock. Better results are obtained by wiring first season growth instead of the usual "yearling" trees, and planting a little deep in the nursery row where moisture is guaranteed. Here again Hibernals are preferable to Virginias; roots grow far more uniformly, and done properly, should run close to a hundred per cent take.

For replants the above system is tops. These first year growths will be budded in August of the year following, and when replanted in the orchard will have a fine balance between root and top, since top is cut back at the same time roots are lost in

replanting.

Our next undertaking was the setting of two hundred regular yearling Hibernals (for Stayman) between old trees in sod, wiring in the fall when set, and mulching heavily with sawdust. They were budded the following summer. This block has done well, and apparently have thrown their own roots. But one was lost by being "choked" to death. Moisture and drainage is a must, and the former can be assured by a liberal application of sawdust; however, extra nitrogen must be used after the first year—for chemical reasons.

Observation was made (without going into the reasons here) that certain varieties like Delicious and Rome Beauty, grow a better tree from one mud rightly placed on center stock than from scaffold budding. This eliminated protection from crotch freezing, but these varieties, we have found, are not as serious in this respect as Jonathan for example. However, though most varieties would have better freeze protection by scaffold budding, this damage is not as serious as at the collar, and our whole problem becomes simplified from the angle of both the nurseryman and the grower by using the one bud system. The grower will not and should not attempt something too complicated.

So for some practical conclusions: Forget Virginia Crab. They develop some fine Grimes, Golden Delicious, Jonathans, McIntosh, etc. but so will Hibernals without running into some of the difficulties of the former.

For replants, set first year growth Hibernals in the nursery, wired and budded as described above.

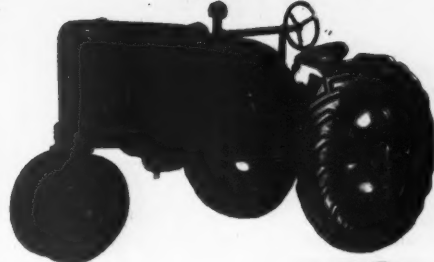
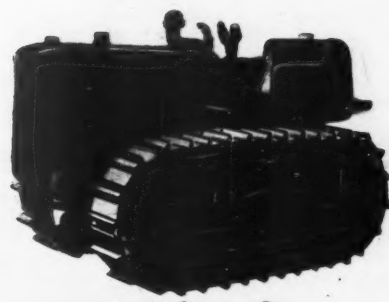
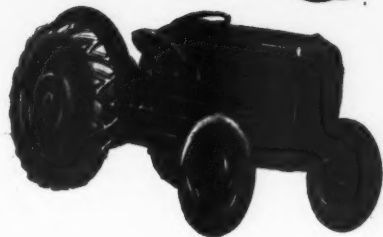
Bud out on scaffolds an average of six inches from main center, but in cases of varieties like Rome and Delicious use only one bud.

In case of large plantings, at least set regular yearling Hibernals in permanent location, a little deep, wire when set, and if moisture is assured by cultivation or adequate mulch, most trees will become self rooted. Moisture will also facilitate budding the following July or August—or while bark is slipping.

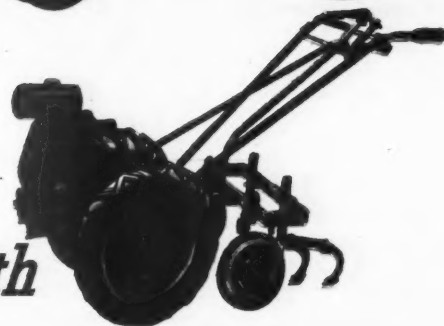
Possibly the nurseryman could best wire these trees when grafted. If the orchardist doesn't want to bother with scaffold budding, the nurseryman could even place one bud the second season of growth while in his nursery.

Do the whole process by budding instead of grafting. It is very simple and the process speedy. It comes at a time when the operator is not so busy as in the spring when grafting is done. Top working can guarantee

(Continued on page 23)



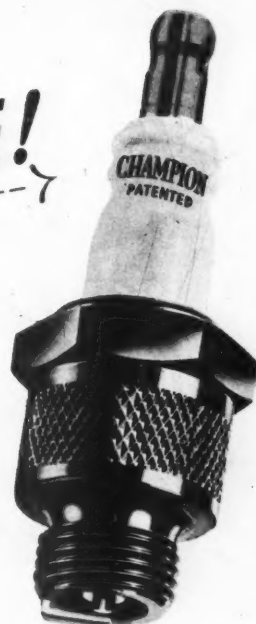
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**FOLLOW THE EXPERTS—USE DEPENDABLE
CHAMPIONS ON YOUR FARM**



CONNECTICUT—During June and July, Connecticut growers had the opportunity of attending three meetings—the annual hamburger roast at the Lyman Farm, the Connecticut Pomological Society summer meeting at the Barnes Bros. Farm and Fruit Growers Day at the University.

The highlights of the Barnes meeting was a tour of the 400 acre apple, peach and pear orchard as well as demonstrations of a speed sprayer, a movable boom sprayer, vapor dusters, dry dusters and a Frost Diffuser.

Sheldon W. Funk, Pennsylvania fruit grower, was guest speaker at the Fruit Growers Day held in conjunction with the University of Connecticut Farm and Home Week, from July 30 to August 1. Mr. Funk re-



John Lyman

lated many interesting observations gathered from his recent tour of the North-western fruit sections as well as timely and worth-while thoughts gathered in his many years of experience as a fruit grower.

Sherman P. Hollister, Professor Emeritus of horticulture at the University, told of his 1945 experiences and travels in England and Scotland.

Staff members of the Connecticut Agricultural Experiment at the New Haven Station and of the University discussed timely fruit topics after which a tour was conducted through the experimental plots. These plots include studies in mulching blueberries, strawberry fertilization, cover crop vs. clean cultivation in peaches and apples, and dwarf root stock for apples.

John Lyman, of Middlefield, received a certificate of Honorary Recognition from the University of Connecticut at exercises in connection with Farm and Home Week. Mr. Lyman is the seventh fruit grower to be so honored since this custom was established in 1924. "The purpose of Honorary Recognition is to signalize out-

standing devotion and fruitful service by men and women who have made noteworthy contributions to agriculture and rural life in Connecticut."

Many fruit growers and their families attended the Song and Dance Festival on August 2. Approximately 1000 dancers participated in the Square Dancing under floodlights on the University Athletic Field.

C. H. Gowdy, of Greenwich, and C. B. Young, of Wallingford, were recently re-elected as the Connecticut directors of the New York and New England Apple Institute.

In spite of spring frosts, poor pollination weather, scab infections and a short dry period in July, fruit prospects for Connecticut look very good. Predictions are for a crop of about 1,250,000 bushels of apples, with peaches and pears promising a good harvest.—Arthur C. Bobb, Extension Fruit Specialist, University of Connecticut, Storrs, Connecticut.

IOWA—This year on November 15th and 16th the annual Little Midwest Horticultural Exposition will be presented by the students of horticulture at Iowa State College. This show is unique not only because it is one of the largest in the country, but also because it is staged entirely by the students.

The show is held in conjunction with the Iowa Horticultural Society, Iowa Fruit Growers Association, and other state garden and horticultural societies.

SOUTH CAROLINA—South Carolina topped all states in the shipment of fresh peaches during 1946, final tabulations show. The State, with a total of 8,698 cars, was 2,300 ahead of Georgia, which usually leads the way. The South Carolina shipments were far ahead of last year's 6,936 cars and information on the shipping showed that 33 states, Canada and Cuba received fruit from the Palmetto State. Miss Annie Belle Cribb, daughter of T. H. Cribb, manager of the South Carolina Peach Growers Association and president of the Spartanburg Chamber of Commerce, is shown with President Truman who seems to be taking plenty of interest in the excellent peaches delivered to him in person.



President Truman accepts peaches.

AMERICAN FRUIT GROWER



"Couldn't use these hills, Lem—'til I put on these B.F. Goodrich tires and got some traction."

Sure you get extra traction with B.F. Goodrich tractor tires. In a recent poll farmers from coast to coast voted 2 to 1 in favor of the open type tread—The B.F. Goodrich kind of tread. For extra traction, twice as many farmers preferred this kind

of tread as preferred the two other principal types combined! Chances are you'll feel the same way once you try these tires that bite deep, pull hard, and clean themselves. When you buy tires get the kind that tractor owners prefer 2 to 1—get B.F. Goodrich tires.

An advertisement of B. F. Goodrich—First in Rubber

HOME FRUIT GARDEN

(Continued from page 7)

satisfaction.

Tree fruits pose a problem. A Montmorency sour cherry tree should probably be standard, though the fruit of Olivet and Reine Hortense is milder and richer and larger regardless of a tendency for the trees to be shy in bearing. Two varieties of sweet cherry, if the climate will permit, will be needed to provide pollination.

Peaches offer a great range. For cold northern sections, the early white Greensboro is still outstanding along with the late-ripening, yellow Crosby and Chili. For more favored sections, Marigold is a good early yellow. Where a freezing peach is desired, it may be well to wait a few days for Oriole which does not discolor easily upon exposure to the air.

Plums begin with the Japanese varieties, as Santa Rosa and Beauty. Shiro is clear yellow. Formosa is very large. The firm, meaty European types follow with such kinds as the yellow Oullins, and the rich blue Sannois. Did you know that there is a sweet Damson, a "pitless" plum, and a variety shaped like a date?

Pears are a questionable fruit. They may blight badly, and they may fall prey to various insects and diseases. Early in the season there is the bright-cheeked Elizabeth. Tyson is a reliable blight-resistant fall pear, the tree of which will live on and on with little attention. Clapp and Bartlett are standard large, yellow pears. Seckel has a small symmetrical tree with delicious small fruit.

Apples are a problem. The trees get large and out of hand. If there is any question, leave them out, along with the pears. On the other hand, if dwarf trees are available, they are splendid for the fruit garden. If a tree is desired no taller than a man, insist on the Malling IX rootstock. If a tree the size of a peach tree is desired, insist on the Malling I. As for varieties, Yellow Transparent is the standard small tree with early yellow fruit.

The fruit garden provides an excellent opportunity to satisfy that curious instinct that all of us have for trying something new. There is more fun and interest in this sort of thing than there is in trying to raise a lot of mediocre fruit. Consult amateurs, fruit lovers, local fruit men, the county agent, the agricultural college, and experiment station. Take some of the fruit magazines. Get in touch with up-to-date nurserymen. This is the greatest enjoyment of the

fruit garden. The best book is U. P. Hedrick's "Fruits for the Home Garden." The New York State Fruit Testing Association at Geneva, New York, has at the moment the widest assortment of material for the home fruit garden, but forward-looking nurserymen are supplying a reasonable choice.

A discussion regarding culture in the fruit garden really requires a special article but a few points may be briefly made. A mulch of straw or some such material is ideal. It conserves moisture, provides winter protection, reduces the labor of cultivation, provides a clean mat, and is generally attractive. A nitrogen fertilizer applied in early spring at the rate of about $\frac{1}{4}$ pound for each year of tree growth will be found not far out of line. Apples will require more.

Control of insects and diseases is often a serious problem. A hand duster or a knapsack sprayer will help, but a power outfit is essential if large trees are included in the garden. Maybe fogs and dusts will some day be perfected to replace the liquid spray, but for the present the spray is best. Custom spraying by neighbors and specialists is increasing and is very satisfactory. For a home-made outfit, a small pump, a motor, and a tank can be rigged up to do the job. It does not take 600 pounds pressure in the fruit garden; 125 pounds will do a lot of spraying.

A general purpose spray that the writer has suggested, with considerable misgivings, is called the "Holiday Spray" for the reason that it is applied (1) before bloom, (2) after bloom, (3) Memorial Day, and (4) Fourth of July. It is composed of wettable sulphur and rotenone mixed according to the manufacturer's directions on the package. It is not the last word, but it is recommended to give "one less worm per apple" and is far more effective than some of its critics may suspect. DDT will undoubtedly be used more widely as it is better understood and will be a great help. In short, the insect and disease control problem is taking a turn for the better so far as the amateur is concerned.

The home fruit garden, then, can be a garden of delight and satisfaction but like all gardens, including the vegetable garden and the flower garden, it will return in proportion to the time, thought, and energy put into it. A careful plan should be made, perhaps some enterprising nurseryman will do this and provide the plants as well. The fruit garden has one definite advantage; it is a type of gardening that can be done standing up!

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The HANDIPILER

Loads, unloads, elevates, stacks—handles cartons, bags, other packages up to 100 lbs. Light weight. Completely portable and self-contained. Available in four heights; adjustable up to 7- $\frac{1}{2}$, 8- $\frac{1}{2}$, 9- $\frac{1}{2}$ and 10- $\frac{1}{2}$ ft.; in two widths with 14 inch and 24 inch belt.

The HANDIBELT

An all purpose incline, decline or horizontal belt portable conveyor. Handles boxes, cartons, crates, bags. Either end may be raised or lowered. Elevates from 10 inches to 6 feet 3 inches, or from 30 inches to 7 feet 6 inches or any angle between.

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The World's Fastest.

6-H.P. EASY TO MOVE
FELLS TREES,
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One motor performs all three operations. Furnished with or without attachments shown below.

Thousands in use. Make BIG profits in the ever increasing wood business. Pulley for belt work. Fully guaranteed. Low direct-to-user prices. FREE details—write TODAY.

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SUPERFINE
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**99%+ PURE
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Superfine is made by an entirely new process of vacuum crystallization which assures high purity and uniformity. A premium product at no extra cost to you!

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Superfine crystals are about the size of coarse table salt. Pour them into a container and play the hose on them. They dissolve before the container is filled! It's the easy and efficient way to make Bordeaux!

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LOW PRICE

**WHAT OHIO GROWERS
ARE PLANTING**

(Continued from page 16)

Fertile Hale.....	6
Vedette	5
Wilma	4

Since Ohio peaches are produced in many areas for local markets and many high quality varieties can be grown, particularly if they have hardiness, even if they lack desirable shipping qualities, there is a trend to plant a number of varieties beyond the list mentioned above. Ohio peach growers are also testing a number of the new varieties of recent origination upon which there is yet very little testing experience in the state.

Elberta still leads, particularly in areas where commercial peach growing is reasonably satisfactory because the tree handles so well and the crop self-thins and gives growers peaches that will handle readily not only on local markets but for shipment if necessary. For this reason it predominates in the areas which are producing peaches beyond the need for immediate local market. The Shippers Late Red, an Elberta type peach with somewhat higher color and perhaps somewhat better hardiness, is still a favorite particularly in Central and Southern Ohio plantings. Among the newer peach varieties Hale Haven has rapidly risen to prominence and over the state is now the leading commercial variety preferred for planting among the mid-season varieties. Golden Jubilee has come through the frosty springs of 1945 and 1946 surprisingly well all over the state, and it is not surprising that growers rate it fourth in their preference for varieties in new plantings. South Haven is still liked by many growers but is losing ground to Hale Haven in newer plantings. Not as many J. H. Hale are planted as formerly because with so many Ohio growers it has not been productive or profitable over the long pull.

The interest in white peaches is increasing but still lags way behind the demand for yellow. However, there is growing interest in Cumberland and Belle of Georgia and a number who market at the orchard still find a good trade on Champion because of its extremely high quality even though it is very difficult to grow and handle. Growers catering to local roadside markets are striving to get a succession of varieties to give them a continual supply of peaches from their earliest to latest varieties. Up to now there has been very little interest in recent years in

varieties that mature after Elberta because of the terrible menace from Oriental fruit moth on late varieties. With DDT spraying showing that this material will control the oriental moth on the fruit quite successfully there may be a revival of interest in the later maturing varieties which this survey does not reveal. However, it has been quite strikingly shown during the last two years that oriental fruit moth can be controlled not only on late varieties of peaches but also on quinces with properly timed and spaced DDT sprays, so that these fruits may well show a revival of interest in new plantings.

Twenty-three strawberry growers reported on the planting trend with strawberries from all important commercial areas. There was no question about the variety they preferred to predominate in new plantings. For several years Premier has been the most dependable and productive strawberry variety for Ohio and since it does not need to be shipped it is proving very satisfactory for Ohio strawberry growers and ranks way ahead of all other varieties. Probably well over 90% of the strawberry plantings in Ohio are of this variety. Catskill is still liked by many and ranks second in preference to Premier, with Dorsett ranking third in northern Ohio and Blakemore ranking third in southern Ohio. Fairfax is still liked by many who can get a premium for a high quality variety on local markets, and on heavy soils, especially in southern Ohio, there is still a desire to plant a few Gandy for late ripening strawberries. The Ohio Experiment Station reports that Midland has been very promising and high yielding for an early mid-season variety which ripens along with Premier in their variety test plots during the last two years. This is a round, conic berry, slightly darker and firmer than Premier and rated somewhat better in quality than Premier, and the Experiment Station suggests that strawberry growers in Ohio should try a few Midland to see how it compares with Premier under their growing conditions. Another variety that is being suggested for trial is Sparkle, an attractive late mid-season variety, high in quality and excellent for freezing. Robinson and Fairpeake have also been promising under tests at the Experiment Station and are suggested for trial by commercial growers.

Among everbearing varieties the Green Mountain has been most productive and has made an excellent record for itself at the Experiment Station both with its fine June crop and its follow up crop of late summer and fall berries.

PEACHES AND GRAPES

(Continued from page 10)

West Frontier Province, India. It requires only minimum amounts of cold to break the rest period and the resultant early blossoming make the flowers susceptible to spring frosts. The wood bark and flowers are not particularly hardy. The fruit is a yellow freestone. The Yunnan was brought to this country from Yunnan Province, China. This stock is much harder than Shalil and has a cold requirement to break the rest period similar to that of Elberta. The fruit is a white-fleshed freestone.

As yet, it has not been definitely determined which is the better stock since this can only be established by tests extending over a considerable period of years. There is, however, a strong tendency on the part of research workers in the South to favor the Yunnan. It is a more economical source of seed for seedlings than the Shalil. The Yunnan appears to be better adapted climatically than the Shalil. Seeds of the Yunnan seem to germinate somewhat better. These factors all add up to give the Yunnan preference over the Shalil as a root-stock for peaches in the South where nematodes are present.

Whatever may be their relative merits, there are now available to growers on infested lands, two stocks which are nematode resistant. Root-knot is undoubtedly one of the factors which limits the life of peach trees when planted on the lighter textured soils. In the future, with the reduction in cost of the Shalil and Yunnan nematode resistant stocks, unless some unforeseen difficulty arises, more orchards will be set to trees budded on these stocks and nematode injury shall become a less important factor in limiting the life of peach trees.

(Continued on page 25)

A GROWER SPEAKS

(Continued from page 19)

true-to-name varieties.

For best results we use raffia in budding; no wax is necessary. Properly timed and executed, results of ninety-eight per cent can easily be attained. One should see the operation to become familiar with the practice and its skills before attempting so important a task.

We have used nothing but hardy stocks in our plantings for twenty years. As experimentation clears up some of the uncertain things about their use, there will be no question as to the advisability of orchardists using hardy stocks as an established practice.

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A galaxy of color, Bronze, Red, Pink and White and Glowing Sunset. Really a sensational Mum. Each plant spreads out into a giant cushion bearing thousands of perfect double mums. Start blooming in mid-summer and last till Fall freeze. Sturdy plants, all five.

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OCTOBER, 1946

23



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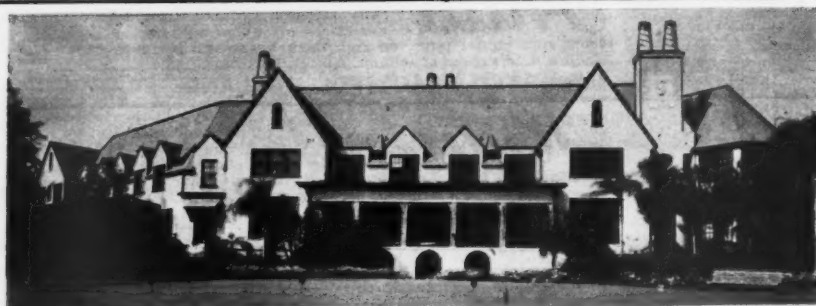
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Advertisement



From where I sit ... *by Joe Marsh*

Bert Childers and the Melon Patch

Bert Childers put an ad in the *Clarion* the other day. Here's what it said:

"Planted more melons than I can eat this year. Stop by and pick as many as you want. All free."

As you can guess, plenty of folks sent their kids over and plenty of the parents came too. They certainly stripped Bert's melon patch in no time. And then when they were ready to go home, Bert treated all the kids to lemonade, and offered the grownups a glass of ice-cold sparkling beer.

Naturally it puzzled some folks,

but Bert explains: "It's always given me a big kick to share things with others when I can afford to—whether it's the melons, or the lemonade, or beer. I guess I just like to indulge my whims."

From where I sit, if we had more "self-indulgent" people like Bert—who believe in indulging in such decent "whims" as share and share alike, live and let live, this tired old world of ours would be a whole lot better off!

Joe Marsh

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UNDERSTOCKS IN THE NORTH

(Continued from page 11)

haleb rootstocks are capable of abundant fruit production. The question that naturally arises in the mind of one working in rootstocks is—Are these varieties on Mahaleb as free from distase and therefore, as long lived as they would be on rootstocks more closely related botanically? Recent studies at the Geneva Station show that in cases where Mahaleb seedlings compose a considerable portion of the trunk, they have a marked dwarfing influence. These indicated affinity differences could be reflected in reduced longevity. As cherry leaf-spot becomes a less serious problem due to more effective sprays and better application equipment, nursery-men may revert to the use of Mazzard seedling. This, however, is provided that sources of hardy American grown seed are developed. The writer can report favorably on some Mazzard selections made more than twelve years ago at the Pennsylvania Station, and grown at Purdue since.

The writer is continuing breeding and selection of nematode and disease resistant strains, of a hardy plum stock. There is need for a more uniform rootstock than the now available Myrobolan seedling. Progress is being made and a uniform hardy plum stock is forthcoming.

Old Home Stock

Pear culture will show an upward trend in acreage in the mid-west when an economical method is developed for producing Old Home on its own roots and thus avoid blight infection of the seedling pear roots now used in propagation. Old Home serves well as a blight resistant trunk and scaffolds for pear trees in the Middle West.

Studies are under way to obtain fire blight resistant quince stocks for dwarfing pears, but no strains suitable for commercial use are available to date.

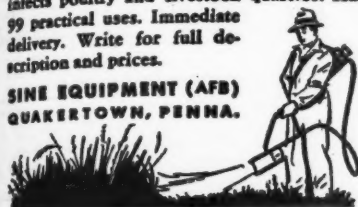
Taking all factors into consideration our studies at Purdue lead us to recommend own-rooted Virginia Crab as the most satisfactory understock for apples. Starting with the selection of a better rootstock for Grimes we have expanded the studies to test the Virginia Crab as an understock for Delicious, Golden Delicious, Jonathan, McIntosh, Rome and Turkey. We have encountered some compatibility problems, but these have been overcome by using red fruited sports or compatible strains of the above varieties top worked into the

MODERN "FLAME-THROWER" KILLS WEEDS!

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STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION ETC. REQUIRED BY THE ACTS OF CONGRESS OF AUGUST 24, 1912, AND MARCH 3, 1933.

OF AMERICAN FRUIT GROWER, published monthly at
Cleveland, Ohio, for October, 1946.
STATE OF OHIO
COUNTY OF CUYAHOGA ss.

Before me, a Notary Public in and for the State and county aforesaid, personally appeared E. G. K. Meister, who, having been duly sworn according to law, deposes and says that he is the Business Manager of the AMERICAN FRUIT GROWER and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, as amended by the Act of March 3, 1933, embodied in section 537, Penal Laws and Regulations, printed on the reverse of this form, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business managers are: Publisher, American Fruit Grower Publishing Company, 1370 Ontario St., Cleveland, Ohio; Editor, J. H. Gourley, 1370 Ontario St., Cleveland, Ohio; Managing Editor, None; Business Manager, E. G. K. Meister, 1370 Ontario St., Cleveland, Ohio.

2. That the owner is: (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding one per cent or more of total amount of stock. If not owned by a corporation, the name and addresses of the individual owners must be given. If owned by a firm, company, or other unincorporated concern, its name and address, as well as those of each individual member, must be given.) American Fruit Grower Publishing Company, 1370 Ontario St., Cleveland, Ohio; E. G. K. Meister, 1370 Ontario St., Cleveland, Ohio; R. B. Campbell, Richmond, Virginia.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are: (If there are none, so state.) None.

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company, but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation by whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

5. That the average number of copies of each issue of this publication sold or distributed through the mails or otherwise, to paid subscribers during the twelve months preceding the date shown above is. (This information is required from daily publications only.)

E. G. K. MEISTER,
Business Manager.

Sworn to and subscribed before me this 16th day of September, 1946.
Nora I. Young, Notary Public.
(Seal) (My commission expires March 25, 1948.)

scaffolds of 4 to 6 year old Virginia Crab trees on their own roots established in orchard locations.

Progress is being made in economical methods of producing own-rooted apple stocks, and such studies will expand the use of hardy disease resistant stocks.

As the initial paragraph states, progress in rootstock development is slow, but the results are obviously a paramount factor in the economy of the fruit growing industry.

PEACHES AND GRAPES

(Continued from page 23)

Grapes

While the American bunch grape is not one of the most important fruit crops in the Southeast, it is grown on a small scale over rather wide areas. The principal difficulty in growing it economically in this section is the short life-span of the vineyard. This has been attributed to many causes, such as various root troubles, but it is more likely that this species of grape is unadapted to the climate of the Southeast. Vineyards of these grapes planted in the Piedmont region of the Southeast look very promising for three and sometimes four years and produce high yields for a year or two but then simply die out. As a solution to this problem research workers turned their attention to grafting on rootstocks which by increasing vigor would cause the scion varieties to be longer lived.

American Varieties

In several of the southern states considerable attention has been given to studies on the adaptability of American grape varieties when grafted on various stocks. Out of all this work, the Dog Ridge variety (*Vitus champini*) seems to be superior to all other stocks tested. This grape is native to the limestone hills of southwestern Texas. It is adapted to the climatic environment of the southern states and the scion varieties grafted on it are more vigorous and productive and longer lived than the same varieties on their own roots.

The principal objection to its use at this time has been the difficulty of getting grafted vines from nurseries. Nurserymen have been reluctant to add this to their already complex operation. This will make the original cost of vines more expensive but the longer life of the vineyards under southern conditions would seem to offset this extra expense.

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CLEAR LAND FAST! Powerful 6-HP motor with friction clutch for safe operation. Cuts down timber, brush and hedge; turn blade vertically and saw logs to length. Can be equipped to fell largest trees. Has clutch pulley for belt work. Fully guaranteed.



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OCTOBER, 1946

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FOR SALE—DOGS OF THE HUNTING BREEDS. Coon, Opossum, Mink, Squirrel, Fox, Rabbit dogs. Judged by appearance. Ten days trial. Write for literature and conditions of sale. Prices reasonable. J. N. RYAN KENNEL, Murray, Kentucky.

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WANTED—EXPERIENCED ORCHARDIST TO SUPERVISE fully equipped 70 acre orchard. Six room dwelling with electric. Attractive contract. Write BOX 58, AMERICAN FRUIT GROWER, 1370 Ontario Street, Cleveland 13, Ohio.

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GROWER

OPPORTUNITY ADS

(Continued from page 26)

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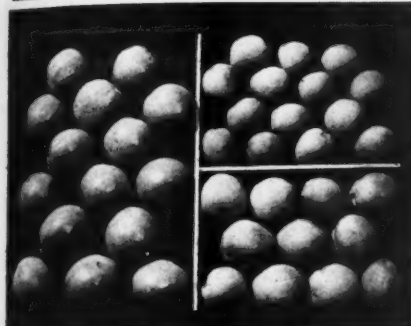
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NEW APRICOT VARIETY

The Sun Glo, (left) a new apricot variety found in the yard of Entiat valley rancher Otto Heider, is compared to Tilton (top) and Wenatchee (bottom) varieties, all picked at about the correct shipping stage of ripeness. The Sun Glo was bright orange, while the others were green. The new apricot is larger, and has a high gloss. Nurseryman W. D. Plough of Wenatchee plans to patent the variety.

Sawdust Makes Good Fruit Tree Mulch

MANY kinds of material ranging from paper to glass wool have been used as mulches for fruit trees, discloses J. H. Gourley, of the Department of Horticulture at the Ohio Agricultural Experiment Station. Straw, hay, and orchard mowings have been most commonly used.

The Experiment Station has used both hardwood and pine sawdust and also shavings for a number of years in contrast with wheat straw, alfalfa, timothy, and others.

The chief question has been about soil acidity and it may be stated that after 12 years of treatment the soil is little or no more acid than it is under bluegrass sod. The soil under the latter has a pH of 5.22, the hardwood sawdust 5.07, the softwood sawdust 5.07, hardwood shavings 5.20, and wheat straw 5.35. Contrary to the common conception, no objection to sawdust from the standpoint of soil acidity is justified from Station experience.

SUGAR ADDS TO AUTUMN GLORY

LEFT-OVER sugar is mainly responsible for many of the brilliant shades of autumn foliage, according to a popular leaflet on the subject issued by the Forest Service of the U.S. Department of Agriculture. Many suppose that frost is responsible for the color changes, but colors change before cold weather as the trees prepare for winter.

"All during the spring and summer," says the leaflet, "the leaves have served as factories, where the foods necessary for the tree's growth have been manufactured. Chlorophyll bodies make the food for the tree by combining carbon taken from the air with hydrogen, oxygen, and various minerals supplied in the water which the roots gather.

"In the fall when the cool weather

causes a slowing down of the vital processes, the work of the leaves comes to an end. The machinery of the leaf factory is dismantled; the chlorophyll is broken up into the various substances of which it is composed, and whatever food there is on hand is sent to the body of the tree to be stored for use in the spring.

"All that remains in the cell cavities of the leaf is a watery substance in which a few oil globules and crystals, and a small number of yellow, strongly refractive bodies can be seen. These give leaves the yellow coloring so familiar in autumnal foliage.

"It often happens that there is more sugar in the leaf than can readily be transferred back to the tree. When this is the case the chemical combination with other substances produces many color shades, varying from the brilliant red of the dogwood to the more austere red-browns of the oaks."

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Ramblings

OF A HORTICULTURIST

Apple Harvest

THE great battle of the season is over and now we are witnessing the glorious rush for the spoils. We must admit that Mother Nature has been kind and gentle to our orchards once again. She has not spent her indomitable wrath upon them in a ruthless attempt to cheat man out of the rich rewards of his industry.

True, apple growers have had some hard knocks during the year, but none so severe as to condemn the "gods" for not showing them a little sympathy. It seems to do an apple grower's heart good to peer into the misty future and predict the worst that could happen to his coveted crop. But then, it never turns out quite that bad, so he ends the season in high spirits.

The trees gracing the gentle slopes and peaceful valleys scattered throughout the length and breadth of our land are now hanging fuller of rich healthful fruit than they were last year. For this we can be thankful. A good and bountiful harvest promotes a feeling of good will that pervades the minds of thoughtful people.

It is the harvest that captures our sight and imagination at this moment. For weeks the orchardist has been keeping a watchful eye upon his reddening and yellowing apples while at the same time casting wary glances skyward. A delayed hail storm could in a split second change joys and profits into sorrow and losses. The Old-Man-Of-the-Winds could easily touch the fairy breezes of the valley and transmute them into mighty roaring winds that would tear every apple from its bosom and dash them to the ground, torn, bruised and bleeding. These experiences are not unknown to the orchardist and the wise never discount them until the fruits are safely stored away.

To the old timers the apple harvest of our day has lost much of its charm and glory. They reminisce of the days when wagon-loads of apples trekked to the community cider mill, of the days when everybody in the community turned out to pick the apple crop and of the time when the apple barrel was in its pride and glory. In-



deed there was then a good bit of romance centered around the apple harvest that is lacking in our harvest this fall.

In those days apple growing was not centered in large concentrated areas as it is now. On the contrary, the millions of trees supplying the apples of American tables were growing on thousands of farms stretching over most of the northern two-thirds of the nation.

Now we have a radically different scene for our apple harvest. The greatest panorama is observed in the valleys of the Pacific Northwest where over one-fourth of the entire crop is now being taken from the trees. A possible second in magnitude of harvest is the Shenandoah Valley and a third the Hudson Valley. Neither can we omit the long stretches of Michigan orchards along the western shore of Lake Michigan, the orchard dotted hills of New England, and the large commercial orchards of the mid-west, Pennsylvania, western New York and the Atlantic coast.

This change in the scene of harvesting has introduced some new characters that half a century ago played only a small part in the event. It brought itinerant workers to help salvage the crop because the industry had outgrown the supply of pickers in

the local area. When fruit growing took on the cast of "big business" it was forced to employ a kind of "factory worker" and to mechanize itself to the limit. Gone were the days when the local people could turn out and pick and pack the apple crop. Gone with those days were the romances of a group of people working together for a common interest. On to the stage came new devices to speed up picking and packing which was to displace some workers but to give jobs to the more skilled and mechanically minded.

This has been the picture on the screen of American history for the past several decades: the disappearance of small working groups of people, each interested in the other's affairs, and the rise of massive groups of people or small groups with powerful influences upon the conduct of society. Perhaps these methods of organization have been necessary for man to keep abreast of the fleeting progress of his mechanical genius. Sometimes we think maybe he has not kept up well enough.

An abundant apple harvest this year, is indeed an encouragement for tomorrow, for it is in the throes of continuous productivity that a democratic people find their greatest material security.

AMERICAN FRUIT GROWER



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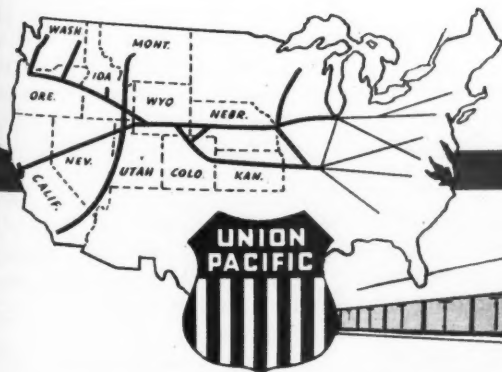
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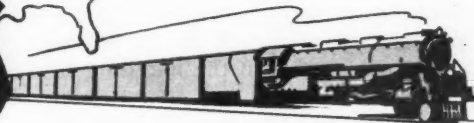
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OCTOBER, 1946

EDITORIAL PAGE

AMERICAN FRUIT GROWER

E. G. K. MEISTER
Publisher

J. H. GOURLEY
Associate Editor

Mechanical Progress

FEATURED at many summer grower meetings this year were demonstrations of new powerful equipment which graphically portrayed the forward strides now being made in the business of producing fruit commercially. Air-blast sprayers blowing mists of spray into trees, scientifically designed spray booms eliminating arm-tiring wielding of spray guns, dusting devices enveloping an orchard in a cloud of protective dust, machines which "fog-in" whole orchards, airplane dusting, new and more powerful insecticides—all show that from the production standpoint the fruit industry is forging ahead.

The American fruit grower is indeed blessed. By use of these devices, he can do a more efficient job with less back-breaking labor. Growers in France and England and other countries who do not have the mechanical equipment we have—who do not in most cases have a tractor—have not been able to reach the standard of living found among growers in the United States. They, in truth, are bound to the soil. Producing a crop of fruit, with no help from machinery, reduces the grower to the position of the age-old serfs of the soil.

With this in mind, it is important for the grower to take an affirmative view towards the new improvements now being offered. It is up to the grower to help in testing and perfecting new equipment under actual orchard conditions. At the same time, the manufacturer must continue to develop ways to reduce the cost of new machinery so its selling price is within reach of the grower's pocketbook.

If this is done we will continue to move ahead. In these terms is progress measured.

Refrigeration Research

IN THE THREE YEARS of its

existence, the Refrigeration Research Foundation proved to itself that scientific research is an essential part of successful business practice.

The Foundation tackles problems of the refrigeration industry from both the long range standpoint and short range research into immediate problems.

It makes funds available to established institutions for projects proposed by them or the industry. Operators who contribute to the Foundation cannot mention this support in any commercial connection.

The Foundation exists to save the money of the industry, and thus, of the consumer, by intelligent research into problems of the industry.

RFD Has 50th Birthday

THEY SAID it wouldn't work, and President Grover Cleveland said it was a "craze," but Congress finally appropriated \$10,000 in 1893 for experimental free delivery routes.

Today, the spiritual descendant of the Pony Express covers almost one and a half million miles a day, employing 32,000 carriers who serve 30 million Americans six days a week.

These carriers are really small post offices on wheels, furnishing the services of a regular post office such as money orders, stamps, parcel post and government bond sales. They are also called on by the U.S. Department of Agriculture to aid in statistical surveys—and the U.S. D.A. considers the information gathered most authentic.

They are having a golden jubilee—and we wish them a good celebration; they are deserving of the thanks of everyone who has lived "in the country" and depended on these men for mail service—often the only contact with the rest of the country for long periods of time.

Agricultural Research

THE GOVERNMENT has authorized the appropriation of nine and a half million dollars for agricultural research in the fiscal year of 1947, in the enactment of the Flannagan-Hope Act into Public Law 733.

Agriculture now is better represented in the research picture of the national economy. Many improvements are needed in the handling of agricultural products to prevent waste and spoilage. This law makes it possible for the government to aid the grower in reducing loss of product and money due to lack of technical information.

It may be a generation before the effects of the bill are felt a great deal, but it is a sound move that has been needed for a long time.

A Judge's Standpoint

IT IS an accomplishment when a showman becomes a good sport—a good winner and a good loser. Unfortunately a judge must look for defects. This is no pleasanter for the judge than the exhibitor. A judge should know varieties and their variations and then have enough judgment to select the best fruit and not be lopsided in placing undue emphasis on minor defects. But in the end his judgment should be final.

Surely anyone who grows fine fruit ought to have the experience of exhibiting it at a show. It's a thrill and it's fun. Furthermore, what looks like unbeatable specimens at home may give one a surprise when they are set down beside the superior fruit grown by someone else.

Rules or standards are necessary for any competition and all exhibitors should know and understand them. Many a misunderstanding would be avoided if this were true. The judge must follow the score card.

In judging plates of fruit the condition of the fruit ranks higher in value than other individual points. This includes freedom from blemishes as well as stage of ripeness. Overripe or green fruit, water core, insect and disease markings, bruising, hail injury, physiological breakdown, limb rub, and russetting, are among the commonly occurring troubles.

Next, in most score cards, are color and uniformity, ranking equal in weight. The characteristic color for a given variety is desired. The under- as well as the over-color is considered. Difficulty has come in recent years with the introduction of red strains of many varieties of apples. If the premium list does not set up separate classes for them the red sports are at a distinct advantage. Too, color varies from state to state. Winesap may be striped and only partially colored or it may have a deep pinkish red of extraordinary beauty. Grimes Golden may be green or golden yellow, depending on where and how grown.

Uniformity is largely a matter of a good showman, selecting specimens that are as nearly alike in all particulars as he can. Color, shape, size, type, stems, markings, should be so nearly alike that they can scarcely be separated.

Size and form often rate the same, making the total for the card 100. The size should be that desired for market and typical of the variety. Fruit that is too small or too large is scored down. Form should be typical.

The show game is intriguing—get in it.

AMERICAN FRUIT GROWER

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and efficiency. In one operation weeds are broken into tiny pieces and uniformly mixed throughout the pulverized soil, and soil thus fortified holds more moisture and produces bigger stands. Ask your Frazer Farm Equipment dealer about the many additional uses for this power tiller, with attachments. Machine and attachments priced surprisingly low.



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OCTOBER, 1946

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The amazing new improvements of Stark and Burbank that bring you World's Champion Trees propagated direct-in-line from record-bearing parent trees ... many

Bear larger fruit!
Bear 1 to 3 years sooner*!
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Astounding results from scientific selection, special super-heavy root system grafting and "fattening" in selected soils before shipping

HERE NOW, in America's most alarming fruit shortage, come trees of the horticultural wizards, Burbank and Stark, offering fruit abundance quickly for individuals with even as little as 20 square feet of ground.

So vastly improved have some varieties of fruit trees become by selecting the heaviest bearers, or the quickest to fruit, or the trees with largest, most vividly colored, most delicious fruit, that the benefits of fruit growing have multiplied many-fold. Thousands of these trees, selected over years and years, are already in the grounds of thousands of delighted growers in virtually every state of the union, and on almost any kind of land where usual farm crops grow.

These tree miracles are the "expert's choice" for home and commercial planting as urged by U. S. Gov't., to produce fruit as quickly as possible.

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In home and farm orchards throughout the country you'll already find these living testimonials to the life work of men like Burbank and Stark—fruit trees that are bearing rich, delicious, premium bringing prize fruit years younger. Yes, these trees bear fruit so young that some often pay back the full tree cost before ordinary trees bear at all.

Amazing new Book of Actual Color Photographs free—Tells how—shows how

This greatest of all fruit catalogs is bringing praise from people in every walk of life all over the country. And no wonder; it shows how and why it is easier to grow prize fruit than ordinary fruit.

This master book of horticulture shows how you

may work wonders with these wonder trees. There are 72 pages, abounding with color photography—actual live fruit photographs that make selection easy. Valuable information on every page. Simple, easy to understand directions on what to do and how to do it, make fruit growing simple and easy. Check coupon to get this magnificent Book of World's Champion Fruits, a book over a foot long—free while they last.

Health authorities are urging people to eat twice as much fruit. More fruit will be needed to supply the devastated countries of Europe. Yet the new U. S. census of agriculture reveals already an alarming fruit shortage—only 1/4 as many apple trees as there were ten years ago. That's why our government is urging more home planting of fruit trees.

Glorious New Book of World's Champion Fruits and Shrubs

Stark's book of World's Champion trees and shrubs shows you, in glorious color photography, how to replace ordinary fruit trees with fruit trees of Burbank and Stark—the trees with a record of bearing earlier and bearing more bushels of top quality, more vividly colored, premium price fruit. Stark Golden Delicious, glorious new Quality Queen of all yellow apples. Unequaled in richest, juiciest flavor—superior in young and heavy bearing! The magnificent new Starking (trade-mark), the King of all red apples—red all over weeks before ripening. Jonared, the gorgeous

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The new fruit creations of Luther Burbank, horticultural wizard, are propagated & sold exclusively by Stark Bros.

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extra income selling exclusive patented varieties of Stark-Burbank trees. 150 years in business, 76 years of advertising, plus thousands of satisfied customers have made Stark trees, shrubs and roses preferred the country over. No investment. No experience to start. Free outfit. Check coupon to get liberal weekly income plan. **MAIL TODAY!**

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Salt Lake City,
April 1, 1944
I closed order of trees and grape vines. When the Stark salesman first contacted us and showed us the catalog, Mrs. Miller and I agreed that it all had an idea in the back of our heads that it was mainly for advertisement because of the recommendation that our friends and neighbors gave us. Last Summer, 1943, to our happy surprise, we didn't have to buy a bushel of peaches (which brought \$5.00 to \$6.00 a bushel) — we picked plenty from our young 2-year old trees for us to eat and can. One of the Golden Delicious apples which hung low on the branches and was picked early by the baby. Thus we are convinced that what you say about having quick bearing trees is true. We are very happy about our small home orchard.
(Signed) Marvin C. Miller

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